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REPORT OF THE PRESIDENT

OF THE

STATE UNIVERSITY

OF IOWA TO THE

BOARD OF REGENTS,

DECEMBER 20, 1871.

DES MOINES:
G. W. EDWARDS, STATE PRINTER.
1872.

REPORT OF THE PRESIDENT

OF THE

STATE UNIVERSITY,

TO THE

BOARD OF REGENTS,

DECEMBER 20, 1871.

26.6

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DES MOINES:
G. W. EDWARDS, STATE PRINTER.
1872.

IOWA STATE UNIVERSITY,
IOWA CITY, Dec. 20, 1871.

To the Board of Regents of the State University :

GENTLEMEN :—In accordance with the requirements of the 16th section of chapter 87 of the laws enacted by the 13th General Assembly, entitled, "An act for the government of the State University," I respectfully submit the following report, covering two full university years, viz. : 1869–70, and 1870–71, with first term of the year 1871–72, a period extending from September 16th, 1869, to December 20th, 1871.

It is thus brought as near as possible to the time of meeting of the next General Assembly of the State, and with your report to the Superintendent of Public Instruction, is intended to convey to that body all necessary information in respect of the University.

GEO. THACHER, *President.*

BOARD OF REGENTS.

GOV. SAMUEL MERRILL,
PRES'T. GEORGE THACHER,
HON. A. S. KISSELL,
Ex-Officio.

HON. DELOS ARNOLD, *Marshalltown*,
HON. AUSTIN ADAMS, *Dubuque*,
Term expires, 1872.

HON. JAMES WILSON, *Buckingham*,
HON. W. W. MERRITT, *Red Oak Junction*,
Term expires, 1874.

HON. JOHN McKEAN, *Anamosa*,
HON. C. W. SLAGLE, *Fairfield*.
Term expires, 1876.

HON. EZEKIEL CLARK, TREASURER,
WM. J. HADDOCK, ESQ., SECRETARY.

GEORGE THACHER,
PETER A. DEY,
LEVI ROBINSON.
Executive Committee.

REPORT.

SECTION I.

DEPARTMENTS.

The University comprises four separate Departments:—

1. The Academical (or *Collegiate*) affording the largest facilities for liberal culture in both letters and science.

2. The Normal, designed exclusively for the education of teachers.

3. The Department of Law, originally the Iowa Law School, established at Des Moines in 1865, but transferred to Iowa City and incorporated with the University in 1868.

4. The Department of Medicine, organized in the latter part of the year 1869–70, but not set in operation till the beginning of 1870–71.

Note.—For particulars concerning the courses of study, and other matters in the several departments, see Section V. of this report.

SECTION II.

OFFICERS, INSTRUCTORS, AND STUDENTS.

1869-70.

JAMES BLACK, D.D.,
President of the University and Professor of Mental and Moral Science.

NATHAN R. LEONARD, A.M.,
Professor of Mathematics and Astronomy.

GUSTAVUS HINRICHS, A.M.,
Professor of Physical Science.

CHARLES A. EGGERT. A.M.,
Professor of Modern Languages and Literature.

WM G. HAMMOND, A.M,
Chancellor of the Department, and University Professor of Law.

GEORGE G. WRIGHT, LL.D.,
Professor of Constitutional, Criminal, and Real Property Law.

CHESTER C. COLE,
Professor of Commercial Law, and the Law of Persons and Personal Rights.

AMOS N. CURRIER, A.M.,
Professor of Latin and Greek Languages and Literature.

CHARLES A. WHITE, A. M., M.D.,
Professor of Natural Science.

STEPHEN N. FELLOWS, A.M.,
Professor of Didactics.
Principal of Normal Dept.

JOHN F. DILLON, LL.D.,
Professor of Medical Jurisprudence.

WM. F. PECK, M.D.,
Dean of Medical Faculty and Professor of Surgery.

P. J. FARNSWORTH, M.D.,
Professor of Materia Medica.

J. M. BOUCHER, M.D.,
Professor of Anatomy.

W. S. ROBERTSON, M.D.,
Professor of Theory and Practice of Medicine and Clinical Medicine.

J. F. KENNEDY, M.D.,
Professor of Obstetrics.

W. D. MIDDLETON, M.D.,
Professor of Physiology and Microscopic Anatomy.

J. C. SHRADER, M.D.,
Professor of Diseases of Women and Children.

WILLIAM C. PRESTON, B.Ph.,
Instructor in Physical Science.

G. L. PINKHAM, A.B.,
Instructor in English Language and Literature and History.

S. S. HOWELL, A.M.,
Instructor in Latin and Greek Languages.

ELLEN A. RICH, A.M.,
Instructor in Collegiate Department.

CELIA A. CURRIER, B.S.,
Instructor in Collegiate Department.

FRANK E. NIPHER, B.Ph.,
Assistant in Physical Science.

O. C. ISBELL,
Instructor in Music.

MISS SARAH J. LOUGHRIDGE,
Instructor in Normal Department.

LAW STUDENTS.

Acers, John T., Manchester, Iowa.
Baker, E. Warren, Leon, Iowa.
Baker, Seth L., Cottonville, Iowa.
Ball, George W., Chicago, Ill.
Brown, Cassius M., Muscatine, Iowa.
Cole, Thomas R., Ottumwa, Iowa.
Crosby, W. Otis, Columbus, Ohio
Ervin, Alfred M., Madison co., Iowa.
Ferguson, Arthur N., Bellevue, Neb.
Ferree, William D., Plattsmouth, Neb.
Finn, George L., Bedford, Iowa.
Fuller, William E., West Union, Iowa.
Glass, John D., Luana, Iowa.
Haines, Richard M., Grinnell, Iowa.
Hamilton, Alphius L., Ottumwa, Iowa.
Hanna, Newton, Mt. Pleasant Iowa.
Herring, Ebenezer, Norwalk, Iowa.
Hilles, Howard, Sullivan, Ill.,
Hole, Leonard H., Sullivan, Ill.
Hurd, A. Arthur, Galva, Ill.
Kirk, Ralph H., Hopkinton, Iowa.
Koogler, John H., Washington, Iowa.
Ladd, Oliver M., Ottumwa, Iowa.
LeRoy, Millard F., Manchester, Iowa.
McPherson, Smith, Mooresville, Ind.
Mills, Milton A., Montana TerrItory.
Nimocks, George W., Ashland, Iowa.
O'Dowd, Terence, Dubuque, Iowa.
Patterson, C. A., Marshalltown, Iowa.
Perry, Edward A., Lafayette, Ills.
Redman, Wm. H., Montezuma, Iowa.
Stidger, Nathan H., Keosauqua, Iowa.
Sucksdorf, H. F., Davenport, Iowa.
Thomas, Lot, New Virginia, Iowa.
Wolf, Francis M., Akron, Ohio.
Wolfe, Patrick B., Toronto, Iowa.
—36.

NORMAL STUDENTS.

FIRST CLASS.

Bloor, Samantha C., West Point.
Bettesworth, Jennie, Maquoketa.
Carleton, Mattie, Iowa City.
Chambers, Eunice, Springdale.
Kauffman, Louisa, Iowa City.
Lloyd, Isabella H., Iowa City.
Meacham, Lucretia E., Clay.
McCrory, Georgie S., Iowa City.
Parker, Mary Webb, Pella.
Sanders, Elma Ann, Iowa City.
Satterthwaite, Clara Jay, Muscatine.
Shepherd, Lavinia, Iowa City.
Welch, Mary Stone, McConnelsville, O.

Carse, John Henry, Fairfield.
Fairbrother, Joseph A., China, Me.
Haddock, George B., Iowa City.
Helm, Joseph C., Orford.
King, Samuel I, Waterloo.
Matthews, Joseph Clark, Muscatine.
Odell, Benjamin F., Greeley.

SECOND CLASS.

Battey, Lois T., Hesper.
Bailey, Mantie E., Biven's Grove.
Brown, Edith, Iowa City.
Claflin, Emma S., Lebanon.
Connor, Fannie, Muscatine.
Cowgill, Agnes V., Oasis.
Deering, Mary C., Independence.
Dick, Nettie, Fairfax.
Ellis, Mary A., Missouri Valley.
Eastman, May C., Iowa City.
Hart, Susan, Iowa City.
Hinman, Sarah J., Low Moor.
Lee, Alice, Vernis, Penn.
Luse, Sarah A., Lancaster, Mo.
McCowan, Mary, Lebanon, Ohio.
Moreland, Sarah, Iowa City.
Odell, Alice, Greeley.
Paige, Anna E., Vinton.
Parrott, Emma, Iowa City.
Patterson, Lillie L., Iowa City.
Romans, Hanna J., De Witt.
Rodgers, Amanda E., Oskaloos
Resor, Mary, Troy.
Sale, Leonora, Iowa City.
Shircliff, Mary F., Iowa City.
Thompson, Mary E., Oasis.
Wood, Mattie, Iowa City.
Watters, Sallie M., Downey.
Willson, Mary E., Iowa City.

Baker, Benjamin S., Wolfdale.
Colburn, Ernest A., Camanche.
Free, Albert T., Toledo.
Gillespie, John A., Pedee.
Hardy, Arthur B., Farley.
Hutchins, Clayton B., Algona.
Luse, Stephen N., Lancaster, Mo.
Mikesell, Andrew J., Belle Plaine.
McCready, Joseph, Vinton.
Pomeroy, Henry C., Nora.
Rosenberger, Henry C., Marengo.
Spade, Ami H., Anamosa.
Waters, Dennis A., Downey.

First Class	20
Second Class	42
Total	62

ACADEMICAL STUDENTS.

RESIDENT GRADUATES.

French, Morton, Griswold College.
Heizer, Rev. Alex. M., Yellow Springs College.

—2.

UNDERGRAUATES.

SENIOR CLASS.

Graves, Sarah V., Jacksonville, Ill.
Myers, Mary E., Iowa City.
Shepard, Kate F., Garden Grove.

Brown, Wm. E., Cedar Falls.
Cook, Justin E., Jesup.
Harrington, C. O., Homestead.
Hiatt, Amos, Jr., Oskaloosa.
Hofiman, Wm., Grandview.
Jenks, A. P., Osceola.
Matthews, J. C., Muscatine.
Nipher, F. E., Iowa City.
Pickler, J. A., Kirksville, Mo.
Preston, C. H., Oskaloosa.
Schell, Jas. P. Downey.
—14.

JUNIOR CLASS.

Grifith, Lizzie, Mt. Pleasant.
Scales, M. Ellen, Iowa City.
Dana, Newell B.,* Kirkville.
Doe, Edward M., Iowa City.
Firbrother, J. Albert, China, Me.
Helm, J. C., Orford.
Loughridge, Albert, Oskaloosa.
Lytle, Wm, Washington.
McClain, Emlin, Iowa City.
Odell, B. F., Greeley.
Switzer, Frank, Fairfield.
Twining, Lauriston, Washington.
Williams, J. Madison, Swede Point.
—13.

SOPHOMORE CLASS.

Cherry, M. F., Saratoga Springs, N. Y.
Dull, Kate R., Iowa City.
Eaton, Lida, Muscatine.
Kauffman, Lou, Iowa City.
McLeary, Sarah, Iowa City.
Milliken, Priscilla, Raritan, Ill.
Mordoff, Louisa, Iowa City.
Underwood, Mary E., Muscatine.

Adams, Charles B., Iowa City.
Anderson, Jno. E., Lake Mills.
Anderson, W. B., Washington.
Butler, George D., Lyons.
Carr, Edmund R., Monroe.
Cousins, Edward B., Red Oak.
Fitch, Robert E., Toledo.
Gordon, Perry Newton, Earlville.
Hanna, Henry Wilson, Blairstown.
Hanna, L. Smith, Mount Pleasant.
King, Marvin R , Hamilton, Ill.
McClellan, George F., Stanwood.
Medes, William J., Keokuk.
Robertson, Walter H., Independence.
Rodman, G. Granville, Washington.
Saunderson, Robert, Blairstown.
Sheldon, Albert, Tipton.
Wilson, Daniel S., Ladora.
Wylie, Jas. R., Crawfordsville.
—27.

FRESHMAN CLASS.

Bowen, Hortense, Iowa City.
Craven, Anna, Oskaloosa.
Fairall, Mary E., Iowa City.
Floyd, Louise F., Iowa City.
Moore, Ida, Belleair.
Prescott, Alice, Enterprise, Miss.
Rogers, Ursula M., Iowa City.
Safford, Mary, Hamilton, Ill.
Shrader, Lucy A., Iowa City.
Terrell, Mary A., Iowa City.

* Deceased, April 10, 1870.

Abbott, George H., Muscatine.
Anderson, David M., Washington.
Baldwin, Charles, Keosauqua.
Barbour, Wm. H., Davenport.
Berryhill, James G., Iowa City.
Blazer, Monroe S., Inland.
Bowman, Levi, Wooster, O.
Burgess, Edward D., Webster City.
Byram, Albert B., Janesville.
Casady, Simon, Des Moines.
Craig, W. Bayard, St. John, N. B.
Culver, John G., Tipton.
Garrett, Cyrus W., Kansas City, Mo.
Glass, Robert C., Luana.
Green, Z. C., De Witt.
Guthrie, George W., Troy.
Hanna, Robert P., Burlington.
Hughes, Samuel M., Muscatine.
Johnson, M. N., Decorah.
Kauffman, John W., Iowa City.
Kitner, William B, Oskaloosa.
Koogler, W. G., Richmond.
Macy, Nathan W., Springdale.
McCall, John A., Nevada.
McIlree, Alex., Richmond.
Mize, T. J., Troy.
Myers, David A., Gettysburg, O.
Osmond, William, Osceola.
Robinson, Edward, Greenbush, Wis.
Rowen, William F., Janesville.
Seerley, Homer H., South English.
Shafer, Austin C., Mt. Ephraim, O.
Smith, Carey R., Iowa City.
Turton, H. A., Farmington.
White, Charles E., Iowa City.
Williams, A. Oscar, Clinton.
Williams, Thomas J., Iowa City.
Wood, Nathan H., Anamosa.
Wylie, John M., Crawfordsville.

—49.

SUB-FRESHMAN CLASS.

Ait, Alice M., North Liberty.
Chapin, Belle, Iowa City.
Chapin, L. Loretta, Durant.
Clites, Maggie, Iowa City.
Colburn, Flora E., Camanche.
Cones, Carrie, Davenport.
Curtis, Fanny, Dexter, Me.
Hughes, Emma, Iowa City.
Kinney, Amanda, Iowa City.
Linah, Kittie, Iowa City.
McPherson, Ida, Council Bluffs.
Mahan, Nannie H., Iowa City.
Mussulman, Clara B., Fairfield.
Shepard, Fannie B., Garden Grove.
Van Fleet, Hattie R., Iowa City.
Wilcox, Ella M., Iowa City.

Berger, Charles A., Iowa City.
Bibler, Columbus, Webster City.
Bond, Charles A., Copi.
Carman, Edward, Agency City.
Casebeer, J A., Tipton.
Chalfant, Arthur E., Iowa City.
Chambers, Hamlin J., Belle Plaine
Coe, George B., Port Byron, Ill.
Cone, J. Walter. Conesville.
Cook, Francis H., Magnolia.
Cox, Frank P., Winterset.
Crane, John W., Montrose.
Dowden, Ashford T., Prairie City.
Fairall, Herbert S., Iowa City.
Finkbine, Charles A., Iowa City.
Funk, Charles W., Keosauqua.
Griffin, N. E., La Motte.
Griffiths, John L., Iowa City.
Greer, Wm. A., Iowa Falls.
Hammond, Herbert, Tipton.
Hanson, Lawrence, Iowa Falls.
Heizer, Cyrus W., Kossuth.
Heizer, D. N., Kossuth.
Hiatt, Harman, Oskaloosa.
Hodges, Wm. J., La Motte.
Huston, Wm., Fairfield.

Hubbard, Charles R., Keokuk.
Jeffrey, A. H., Ainsworth.
Kelley, Edmund L., Benton.
Kelley, J. M., Benton.
Kelley, P. P., Benton.
Kennedy, John, Iowa Falls.
Koons, J. H., Boston, Ind.
Livington, W. J., Ainsworth.
Lovelace, Chauncey A., Iowa City.
Mattison, Thomas, Oskaloosa.
McConnell, J. J., Ainsworth.
McLoud, Edward S., Tallegrand.
McMillan, Edward C., Ainsworth.
Montgomery, Joel, Springdale.
Murphy, D., Wilton.
Morseman, A. H., Iowa City.
Neiman, Jno. N., Tipton.
Newton, Lester W., Belle Plaine.
Ochiltree, Henry M., Morning Sun.
Odell, G. H., Greeley.
Parker, G. F., Des Moines.
Pickering, W. E., Springdale.
Robertson, J. C., Dutch Creek.
Rodgers, Wm. F., Oskaloosa.
Romans, Jno. B., De Witt.
Rood, Wm., Springdale.
Rose, Euphrates A., Yatton.
Sage, Emerson W., Victor.
Sanders, Euclid, Iowa City.
Seymour, Frank E., Iowa City.
Shields, Wilbur, Iowa City.
Simmonds, Marvin L., Stanwood.
Springer, Arthur, Columbus.
Swiaher, Jno. P., Shueyville.
Tatum, Elwood, Ft. Sill, Ind. Territory.
Tibbetts, Geo. W., Belfast, N. Y.
Tomson, Joseph, Oskaloosa.
Van Camp, A. E., Omaha, Neb.
Wade, Louis, F., Detroit, Michigan.
Walker, Jno. A., Princeton.
Ward, Reuben, Council Bluffs.
Westfall, Jno. B. W., Winterset.
Weeber, Wm., J., Iowa City.
Wyant, Ned., Janesville.
Young, Wm. J., Albia.

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SUMMARY.

Resident Graduates	2	Freshman	49
Seniors	14	Sub Freshman	87
Juniors	13		
Sophmores	27	Total	192

INTRODUCTORY CLASS.

Allard, Ettie M., Iowa City.
Allin, Alice, Iowa City.
Bacon, Emma, Iowa City.
Ballard, Carrie, Oakfield.
Bartlett, Jennie, Round Grove.
Bechtell, Lucy N., Victor.
Blakesley, Ida M., Iowa City.
Carter, Vona, Iowa City.
Charles, Lucy W, Iowa City.
Christopher, Francis Ella, Oxford.
Connelly, Emma, Iowa City.
Coulter, Emma J., Iowa City.
Coulter, Louisa Alice, Oasis.
Crawford, Virginia, Calhoun.
Culbertson, Maggie, Tipton.
Dawson, Mary Emma, Iowa City.
Duff, Cyrena J., Iowa City.
Ellis, Clara, Iowa City.
Ellis, Sada C. Iowa City.
Farr, Ellen, Winfield.
Fisher, Mary, Solon.
Gilbert, Marion, Iowa City.
Gilliland, Mary, Iowa City.
Griffith, Annie E., Anita.

Hall, Flora E., Iowa City.
Haroff, Libbie, Muscatine.
Harrington, Angeline, Homestead.
Hartsock, Hattie, Iowa City.
Heudtlass, Hattie, Iowa City.
Holmes, Maggie, Atalissa.
Howard, Louie, Tipton.
Huff, Alice A., Iowa City.
Hughes, Lou E., Iowa City.
Jones, Jennie M., Iowa City.
Kenyon, Emma O., Amish.
Kenyon, Helen E., Amish.
Kerr, Amy, Fairfax.
Kinney, Florence, Iowa City.
Knight, Kate, De Witt.
Lawton, Grace, Dubuque.
Loveclace, Louisa E., Iowa City.
Lowmiller, Laomi, Iowa City.
Mansfield, Emma, Iowa City.
Marshall, Saretta M., Iowa City.
McElwaine, Vannie, Iowa City.
Miller, Elizabeth K., Muscatine.
Miller, Rebecca S., Muscatine.
Montgomeay, Minerva E., Exira.
Moon, Mary E., Iowa City.
Morse, Elvira L., Iowa City.
Murphy, Maggie G., Danforth.
Muzzy, Frona M., Camanche.
Mygatt, Flora B., Iowa City.

Odell, Abbie, Greeley.
Odell, Nannie, Greeley.
Osmond, Ellie, Iowa City.
Phelps, Sarah L., Malden, Ill.
Piercy, May J., Buffalo Fork.
Pilbeam, Ida, Belle Plaine.
Pinney, Hattie E., Iowa City.
Plants, Lucy, Winfield.
Powell, Sarah E., Iowa City.
Rankin, Lavina C., Iowa City.
Rankin, M. E., Iowa City.
Reno, Flora, Iowa City.
Rumsey, Electa M., State Center.
Sasseen, Lucia, Boonville, Mo.
Sawyer, Julia E., Iowa City.
Seeley, Lucy J., Primrose.
Seydell, Mamie, Iowa City.
Skinkle, Belle, Iowa City.
Smith, Anna M., Downey.
Strohm, Anna M., Wilton.
Sweeney, Jennie H., Iowa City.
Switzer, Maggie E., Iowa City.
Tantlinger, Alice, Tiffin.
Van Fleet, Ella L., Iowa City.
Waldron, Belle, Iowa City.
Wicks, Mattie, Davenport.
Wintermute, Jarah J., Lytle City
Wood, Millie, Dayton, O.
Woodstock, Nellie, Iowa City.

Anson, A. C., Marshalltown.
Anson, S. R., Marshalltown.
Baldwin, John, Cedar Bluffs.
Banks, Robert A., Village Creek.
Barclay, Preston W., West Liberty.
Barnett, Louis, Mitchell.
Baum, John, Vinton.
Blake, Winfield S., Belle Plaine.
Bowman, John F., North Liberty.
Bridenstine, Sylvester J., N. Liberty.
Buchanan, Wm. H., Solon.
Buzick, Henry C., North Point, Mo.
Byington, Robert W., Iowa City.
Chamberlin, Leroy F., North Liberty.
Cheshire, Thos., Montezuma.

Clark, Geo. B., Iowa City.
Clearman, Edward, Iowa City.
Clingan, Chas. E., Vinton.
Cohick, Walter, Iowa City.
Combs, J. W., Colesburg.
Cook, C. J., Bangor.
Felkner, Oscar O., Vinton.
Fesler, D. A., Yatton.
Fesler, John, Yatton.
Gibbs, Frank, Iowa Falls.
Goodrich, Lzra, Red Oak.
Hall, Elbert A., Belle Plaine.
Hall, John W., Montezuma.
Hetzel, Louis C., Monticello, Ills
Hill, Isaac, Magnolia.

Hill, James H., Montana.
Hinchen, John, Lansing.
Howard, E. B., Bangor.
Howard, D. W., Tipton.
Hoyt, Charlie L., Iowa City.
Kauffman, Eddie, Iowa City.
Kaaffman, Harry, Iowa City.
Kizer, J. W., Tipton.
Lamb, Jacob W., Toledo.
Livingston, Thos. W., Ainsworth.
Mehanna, Wm. T., Eveland Grove.
Mills, Chauncey L., Fingal, Canada.
Oren, Samuel A., Laporte City.
Osmond, Kirk, Iowa City.
Parmenter George, Edgington, Ill.
Parvin, Theodore W., Iowa City.
Patterson, Robert C., Newton.
Rankin, Wm. M., Iowa City.
Read, Wm. H., Fairfield.
Reman, Nelson L., Dresden.
Roberts, John R., Iowa City.
Rock, G. Taylor, Vinton.
Seerly, John J., South English.
Slaughter, James F., Albany, O.
Smith, James A., Fairfield.
Spear, Stuart, Red Oak.
Sperry, George, Iowa City.
Spohn, James H., Cedar Bluffs.
Springer, Warren, Columbus City.
Strub, Herman A., Iowa City.
Switzer, Charles E., Iowa City.
Switzer, Joshua P., Iowa City.
Watson, George B., Iowa City.
Webb, A. D., Springfield, Wis.
White, Henry C. Marion.
Wilson, Bruce A., Mason City.
Xanten, Frank A., Iowa City.

SUMMARY.

Introductory	149	Law	36
Academical	192	Normal	62
		Total (1869–70)	439

SECTION III.

OFFICERS, INSTRUCTORS, AND STUDENTS.

1870-71.

GEORGE THACHER,
President of the University, and Professor of Mental and Moral Science.

NATHAN R. LEONARD, A.M.,
Dean of the Academical Faculty, and Professor of Mathematics and Astronomy.

GUSTAVUS HINRICHS, A.M.,
Professor of Physical Science.

CHARLES A. EGGERT, A.M.,
Professor of Modern Languages.

WM. G. HAMMOND, LL.D.,
Resident Professor of Law, and Dean of the Law Faculty.

GEORGE G. WRIGHT, LL.D.,
(United States Senator.)
Professor of Constitutional and Criminal Law.

CHESTER C. COLE, LL.D.,
(Of the Supreme Court of Iowa.)
Professor of Commercial Law, and the Law of Persons and Personal Rights.

AMOS N. CURRIER, A.M.,
Professor of the Latin Language and Literature, and University Librarian.

CHARLES A. WHITE, A.M., M.D.,
Professor of Natural Science.

STEPHEN N. FELLOWS, A.M.,
Professor of Didactics.

JOHN F. DILLON, LL.D.,
(U. S. Circuit Judge.)
Professor of Medical Jurisprudence.

W. F. PECK, M.D.,
Dean of Medical Faculty and Professor of Surgery.

P. J. FARNSWORTH, M.D.,
Professor of Materia Medica.

J. M. BOUCHER, M.D.,
Professor of Anatomy.

W. S. ROBERTSON, M.D.,
Professor of Theory and Practice of Medicine.

W. D. MIDDLETON, M.D.,
Professor of Physiology and Microscopic Anatomy.

J. C. SHRADER, M.D.,
Professor of Obstetrics and Diseases of Women and Children.

LEONARD F. PARKER, A.M.
Professor of the Greek Language and Literature.

MRS. ELLEN A. RICH, A.M.,
Instructor in Mathematics.

MRS. CELIA A. M. CURRIER, B.S.,
Instructor in Latin.

WILLIAM C. PRESTON, B.Ph.,
Instructor in Physical Science.

MISS SARAH F. LOUGHRIDGE,
Instructor in Normal Department.

GEO. T. KELLER, A.M.,
Instructor in the English Language and Literature.

FRANK E. NIPHER, B.Ph.,
Assistant in Physical Science.

OTTO SCHMIDT,
Assistant in German.

O. C. ISBELL,
Instructor in Music.

JOHN NORTH, M.D.,
Demonstrator in Anatomy, and Curator of the Museum.

R. W. PRYCE.
Pro-Sector of Surgery.

E. H. HAZEN, M.D.,
Lecturer on Ophthalmology and Otology.

MARK RANNEY, M.D.,
(Superintendent of the Iowa Hospital for the Insane,)
Lecturer on Insanity.

P. T. SMITH, D.D.S.,
Lecturer on Dental Surgery.

LAW STUDENTS.

Barclay, James Traer, West Liberty.
Brown, Cassius M., Muscatine.
Burling, Frederick S., Colorado Ter.
Callander, Darius Frank, Bradford.
Campbell, Alva Ellsworth, Blue Grass.
Carr, Edward M., Manchester.
Clark, Ernest Edward, Corydon.
Conniff, Thomas H., jr., Sioux City.
Doe, Edward Madison, Iowa City.
Doze, John C., Mills county.
Dunlavy, Levi, Drakeville.
Eaton, Willard L., Osage.
Ege, Chap Peter, Albany, Ill.
Greene, Sturgis H., Adel.
Hamilton, Alphius Lamont, Ottumwa.
Heine, Franklin, Cedar Rapids.
Hull, Andrew Jackson, Morgan, co., Ill.
Ingham, Thomas Edward, Wilton.
Jackson, William N., Waterloo.
Kinsey, William, Durant.
Kissick, Robert, Oskaloosa.
Lindberg, John A., Bridgeport.
Lyman, Jacob P., Grinnell.
Lynch, William Allen, Mt. Pleasant.
McCready, James E., Vinton.
Macy, John Coggeshall, Newport, R. I.
Martz, Dennis J., Elm Spring.
Melvin, Joel H., Sheffield, Ill.
Morris, Edward T., Galesburg.
Names, Charles E., Welton.
Names, Loring W., Welton.
Nimocks, George W., Ashland.
Patterscn, Calvin A., Williamsburg, Pa.
Ranck, Cyrus S., Dallas City, Ill.
Sears, Reuben Edward, Grinnell.
Simenson, Rasmus J., Ossian.
Smith, Arthur L., Alden.
Snow, Eugene E., Grinnell.
Snyder, Theodore B., Burlington.
Tracy, Samuel K., Burington.
VanCamp, Andrew N., Sweetland Center
Van Winkle, William T, Oskaloosa.
Wolf, William H., Prairie City.
Wright, Samuel Drew, Mt. Pleasant.
Young, Joseph W., jr., Utah Territory.

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MEDICAL STUDENTS.

Byers, George W. Nashua.
Carmichael, Benj. F., Davenport.
Charlton, Josephus B., Baden.
Frost, George W., Clinton.
Hall, Robert S., New York.
Hanna, John W., Mt. Pleasant.
Hankins, Wm. A., Atlanta.
Hetzel, Louis C., Monticello, Ill.
Holmes, Jesse, West Liberty.
Jennings, John M., Council Bluffs.
Kulp, John H., Muscatine.
Koogler, Wm. H., Richmond.
Lilly, Melvin W., Centre Point.
Mason, Martin, Smithland.
Martyn, John L., Homestead.
Nichols, Wm. H., Waltham.
Nichols, Charles E. Girard.
North, Gustavus, Springville.
Homer R. Page, B. A., New Sharon.
Isaac L. Potter, Mt. Pleasant.
Robertson, James C., Dutch Creek
Seems, Tilghman, Talleyrand.

Scott, James, Guthrie Centre.
Skinkle, George L., Iowa City.
Tulloss, Nathan, H., Iowa City.
Vogt, Wm. J., Iowa City.
Webber, C. L., West Union.
Wheeler, Charles C., Oxford.
Worley, Howard A., Davenport.

Cleaves, Miss M. Abbie, Davenport.
Jennings, Mrs. Mary B., Council Bluffs.
Orr, Miss Lorinda, Iowa City.
Preston, Mrs. Jane A., Iowa City.
Ronald, Miss Carrie M., Grandview.
Shepherd, Mrs. Ame. A., Iowa City.
Smith, Mrs. Mary, Iowa City.
Whitfield, Mrs. Isabel G., Parkersb'g.
—39.

NORMAL STUDENTS.

Baker, Benjamin S., Correctionville.
Colburn, Ernest A., Iowa City.
Domer, William S., Rockland, Penn.
Gordon, Perry N., Earlville.
Gillespie, John A., Pedee.
Hanson, Lawrence, Iowa Falls.
King, Marvin B., Hamilton, Ill.
Watters, Dennis A., Downey.

Bailey, Mantie E., Biven's Grove.
Bettesworth, Eleanor, Makoquota.
Brown, Edith E., Iowa City.
Dana, Annis M., Pella.
Dick, Antoinette M., Fairfax.
Hedges, Mary K., Fairfax.
Linman, Sarah J., Low Moor.
Luse, Sarah A., Glenwood, Mo.
Paige, Anna E., Vinton.
Rodgers, Amanda E, Oskaloosa.
Rudd, Mattie E., Pella.
Ryan, Mary, Iowa City.
Sperry, Lizzie, Iowa City.
Thompson, Mary E., Oasis.
Wilcox, Ellen M., Iowa City.
—23.

ACADEMICAL STUDENTS.

RESIDENT GRADUATES.

French, Morton, Griswold College.
Heizer, Rev. Alex. M., Yellow Springs College.
Hiatt, Amos, University.
Shepard, Kate F., University.
Apthorp, Mary E., Iowa College. —5.

SENIOR CLASS.

Fairbrother, J. Albert, China, Me.
Loughridge, Albert, Oskaloosa.
Lytle, William, Washington.
McClain, Emlin, Iowa City.
Smitzer, Frank, Fairfield.
Williams, J. Madison, Swede Point.
Wylie, James Renwick, Crawfordsville.
Griffith, Lizzie, Mt. Pleasant.
Scales, M. Ellen, Iowa City.
—9.

JUNIOR CLASS.

Anderson, John E., Lake Mills.
Anderson, William B., Washington.
Boyd, R. A., Washington.
Carr, E. R., Monroe.
Cousins, Edward B., Red Oak.
Craig, W. Bayard, St. Johns, N. B.
Fitch, Robert E., Toledo.
Gordon, Perry Newton, Earlville.
Hanna, Henry Wilson, Blairstown.
Hanna, L. Smith, Burlington.
Houston, S. B., Greenwood, Mo.
King, Marvin R., Hamilton, Ill.
McCall, John A., Nevada.
McClellan, George F., Stanwood.
McClurkin, Sam. R., Ayres Point, Ills.
Medes, William, J., Keokuk.
Odell, Benjamin F., Greeley.
Powers, Le Grand, Preston, N. Y.
Saunderson, Robert, Fairfax.
Sheldon, Albert, Tipton.
Swisher, E. Abram, Shueyville.
Wilson, Daniel S., Ladora.
Dull, Kate R., Iowa City.
Eaton, Lida, Muscatine.
Fairall, Mary E., Iowa City.
Kauffman, Lou, Iowa City.
McCleary, Sarah, Iowa City.
Milliken, Priscilla, Biggsville, Ill.

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SOPHOMORE CLASS.

Anderson, David M., Washington.
Baber, Albert T., Newport Center.
Berryhill, James G., Iowa City.
Bowman, Levi, Wooster, O.
Burgess, Edward D., Webster City.
Burke, Wm. D., Wilton.
Byram, Albert B., Janesville.
Campbell, A. E., Blue Grass.
Casady, Simon, Des Moines.
Elwell, John C., Waterloo.
Forbes, Wm. M., Rock Grove City.
Glass, Robert C., Luana.
Guthrie, George W., Troy.
Hanna, Robert P., Burlington.
Heizer, David N., Kossuth.
Hughes, Samuel C., Muscatine.
Johnson, M. N., Decorah.
Kellogg, Adelbert E., Tabor.
Ketner, Wm. B., Oskaloosa.
Koogler, Washington G., Richmond.
Krug, John, Muscatine.
Macy, Nathan W., Springdale.
Mattison, Thomas, Oskaloosa.
McIlree, Alexander, Richmond.
Mize, Thomas J., Troy.
Montgomery, John C., Bentonport.
Myers, David A., Gettysburg, O.
Osmond, William, Osceola.
Seerly, Homer H., South English.
Shafer, Austin C., Mount Ephraim, O.
Smith, Carey R., Iowa City.
White, Charles E., Iowa City.
Williams, A. O., Clinton.
Williams, Thomas J., Iowa City.
Wood, Nathan H., Anamosa.
Wylie, J. M., Crawfordsville.

Craven, Anna, Oskaloosa.
Orr, Lorinda, Iowa City.
Rogers, Ursula M., Iowa City.
Satterthwaite, Jay Clara, Muscatine.
Shrader, Lucy, Iowa City.
Terrell, Mary A., Iowa City.

FRESHMAN CLASS.

Baldwin, Charles, Jr., Keosauqua.
Barbour, William H., Davenport.
Barnett, Louis C., Davenport.
Berger, Charles A., Iowa City.
Bond, Charles A., Copi.
Burkhart, H. Z., Marshalltown.
Chalfant, Arthur E., Iowa City.
Chambers, H. J., Iowa City.
Cherry, J. A., Saratoga Springs, N. Y.
Cone, James W., Conesville.
Cotton, James G., Pella.
Crane, J. W., Montrose.
Deacon, Charles J., Marion.
Fairall, Herbert S., Iowa City.
Fitch, E. E., Fayette.
Gibbs, Frank, Iowa Falls.
Griffiths, John L., Iowa City.
Heizer, Cyrus W., Kossuth.
Hiatt, Harmon, Oskaloosa.
Hinchon, John W., Lansing.
Huston, William, Fairfield.
Kelly, J. M., Benton.
Kennedy, John, Iowa Falls.
Luse, Stephen N., Glenwood, Mo.
McCloud, Edward S., Talleyrand.
Murphy, Dennis, North Liberty.
Neiman, John N., Tipton.
Reid, F. D., Albia.
Rodgers, William F., Oskaloosa.
Russell, George P., Des Moines.
Sanders, Euclid, Iowa City.
Shields, Wilbur, Iowa City.
Stone, Frank E, Waukon.
Swisher, John P., Shueyville.
Tibbetts, George W., Belfast, N. Y.
Tisdale, W. D., Des Moines.
Van Camp, A. E., Omaha, Neb.
Walker, John A., Princeton.
Young, William J., Albia.

Andrews, Jessee, Iowa City.
Bailey, Mantie E., Biven's Grove.
Cleaves, Abbie, Columbus.
Clites, Maggie, Iowa City.
Colburn, Flora E., Camanche.
Hughes, Emma, Iowa City.
Lloyd, Louisa F., Iowa City.
Murphy, Lavanda, North Liberty.
Musselman, Clara B., Fairfield.
Odell, Alice, Greeley.
Prescott, Alice, Enterprise, Mo.
Skiles, Ella P., Davenport.
Smith, Lucy F., Iowa City.

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SUB-FRESHMAN CLASS.

Ames, Alva, Johnson P. O.
Beem, J. T., Ladora.
Brainerd, Ossian H., Iowa City.
Brown, Lovilo H., Indianola.
Buckman, O. H., Atalissa.
Byers, George, Nashua.
Casebeer, John A., Tipton.
Clarke, George D., Fairfield.
Cohick, Walter S., Iowa City.
Cole, Wm. W., Des Moines.
Dawson, Jo. R., Washington.
Fesler, John, Yatton.
Finkbine, Charles, Iowa City.
Gibbons, W. A., North English.
Gillespie, S. S., Pedee.
Given, Arthur M., Des Moines.
Goddard, Thomas M., Troy.
Green, Willard R., Muscatine.
Greer, W. A., Iowa Falls.
Haines, Clayton T., Attica.
Hall, Edward A., Belle Plaine.
Hall, John W., Montezuma.
Hall, James S., Aledo.
Hamilton, John J., Ottumwa.
Hanna, Thomas, Burlington.
Hart, W. S., Camanche.

Flickinger, A. T., Winthrop.
Hill, James H., Montana.
Hilleary, Louis, Burlington.
Hohman, Charles H., Lincoln, Neb.
Hodgers, W. J., Lamotte.
Holmes, D. A., Marshalltown.
Jacque, C. B., Marengo.
Johnston, G. P., Newton.
Johnson, J. W., Indianapolis.
Kettlewell, W. A., Iowa City.
Lamb, Jacob W., Toledo.
Leverich, John H., Wilton.
Lovelace, Chauncy, Iowa City.
Lucas, Robert, Iowa City.
Luse, Walter C., Des Moines.
Lyon, Frank T., Stellapolis.
Magill, Daniel P., Iowa City.
Manson, R. B., Waterloo.
Moon, Manly B., Iowa City.
Morrow, T. J., Osceola.
Nipher, Lyman T., Iowa City.
Osmond, J. Kirk, Iowa City.
Parsons, A. E., Brighton.
Parvin, Theodore W., Iowa City.
Price, David, Stellapolis.
Rankin, Wm. A., Iowa City.
Reed, J. J., Blackberry, Ill.
Read, W. H., Fairfield.
Richards, Julian W., Waterloo.
Saylor, George S., Saylorville.
Sampson, Gideon G., Fairfax.
Scott, Orrin C., Marshalltown.
Scott, John T., Luana.
Shuell, T. J., Lytle City.
Skiles, Hugh P., Walcott.
Slagle, F. M., Fairfield.
Slagle, B. W., Fairfield.
Spear, Robert, Summit.
Sperry, George, Iowa.
Springer, Artqur, Burlington.
Sullivan, Dennis, Cascade.
Swank, Henry H., Kingston.
Swafford, C. C., Iowa City.
Sweeney, James K., Iowa City.
Teller, George, Albia.
Teller, Isaac D., Albia.
Townsend, R. B., Albia.
Wall, Charles S., Anamosa.
Wallick, M., Cedar Bluffs.
Watson, George A., Washington.
Westfall, J. B. W., Winterset.
Wiligrod, Edward A., Marshalltown.
Wilson, Rollie J., Fairfield.
Wood, Alfred, Springdale.
Woodrow, Thomas, Altoona.
Wright, Carroll C., Des Moines.
Yoder, C. C., Somerset.

Atkinson, Ella M., Short Creek, Del.
Bacon, Emma, Iowa City.
Clark, Lizzie L., Iowa City.
Cochran, Lillie, Davenport.
Eastman. Eloise C., Iowa City.
Elliot, Sadie, Montana.
Evans, Lucy D., West Liberty.
Gans, Flora, York Center.
Gray, Belle, Iowa City.
Hamilton, Ella A., Ottumwa.
Hance, Mattie, Biven's Grove.
Hanson, Huldah J., Melpine.
Henderson, Lizzie, Maquoketa.
Hepburn, Eda, Clarinda.
Huff, Alice, Iowa City.
Hughes, Lou E., Iowa City.
Jackson, Harriet, Sunnyside.
Jaque, Lillie, Marengo.
Joy, Anna M., Elmwood, Ill.
Kerr, Amy, Fairfax.
Kinney, Florence, Iowa City.
Lawton, Grace, Vinton.
Lee, Blanche, Iowa City.
Lewis, Minnie, Iowa City.
Linah, Kate, Iowa City.
Lovelace, Lou E., Iowa City.
Mahan, Nannie, Iowa City.
Mansfield, Emma, Iowa City.
Mark, Emma, Albia.
McMeans, Mattie, Andrew.

Millar, Rebecca, Muscatine.
Millar, Lizzie, Muscatine.
Minthorn, Phebe R., West Branch.
Moon, Mollie E., Iowa City.
Morse, Elvira, Iowa City.
Muzzy, Sophronia M., Camanche.
Nixon, Emma A., Ashland. O.
Osmond, Ella, Iowa City.
Phelps, Sarah, Malden, Ill.
Rankin, Emma M., Iowa City.
Remley, Clara, Oxford.
Ronald, Carrie, Grandview.
Sanders, Kate, Iowa City.
Sasseen, Lucia, Booneville, Mo.
Sawyer, Julia E., Anamosa.
Seymour, Emma L., Iowa City.
Tantlinger, Alice, Tiffin.
Thompson, Emma, Iowa City.
Van Fleet, Ella, Iowa City.
Ward, Anna B., Oxford.
Whedon, Loraine, Iowa City.

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SPECIAL STUDENTS.

Aldrich, James H., Ida.
Billingsley, R. W., Iowa City.
Busick, H. C., North Point.
Byington, Robert W., Iowa City.
Casebeer, Charles, Tipton.
Coe, Geo. B., Sterliug, Ill.
Cox, F. P., Winterset.
Free, A. T., Toledo.
Greene, Wesley, Davenport.
Hasner, E., Independence.
Hull, Abijah, Wassonville.
Kerr, E. F., Solon.
Kimball. Charles H., Iowa City.
Lee, Joseph, Iowa City.
Lockhart, A. W.
McClelland, P. W., Potsville.
Mize, E. J., Troy.
Morehead, H., Ida.
Morrison, J. K. P., Marengo.
Morseman, H. A., Iowa City.
Patterson, C. C., Washington.
Patterson, R. C., Newton.
Polley, J. F., Monona.
Reynolds, Daniel, West Liberty.
Sargent, E. W., West Side.
Seerly, J. J., South Englisb.
Siebel, William, Oskaloosa.
Spear, Stewart S., Red Oak.
Spohn, James H., Cedar Bluffs.
Thomas, Charles H., West Union.
Vierth, Joseph H., Jesup.
Vorse, Charles S., Des Moines.
Yost, John L., Cassapolis, Mich.
Watson, Geo. B., Iowa City.
Worley, H. A., Davenport.

Aldrich, James H., Ida.
Billingsley, R. W., Iowa City.
Busick, H. C., North Point.
Byington, Robert W., Iowa City.
Casebeer, Charles, Tipton.
Coe, George B., Sterling, Ill.
Cox, F. P., Winterset.
Free, A. T., Toledo.
Greene, Wesley, Davenport.
Hasner, E., Independence.
Hull, Abijah, Wassonville.
Kerr, E. F., Solon.
Kimball, Charles H., Iowa City.
Lee, Joseph, Iowa City.
Lockhart, A. W.
McClelland, P. W., Postville.
Mize, E. J., Troy.
Morehead, H., Ida.
Morrison, J. K. P., Marengo.
Morseman, H. A., Iowa City.
Patterson, C. C., Washington.
Patterson, R. C., Newton.
Polley, J. F., Monona.
Reynolds, Daniel, West Liberty.
Sargent, E. W., West Side.
Seerly, J. J., South English.

Siebel, William, Oskaloosa.
Spear, Stewart S., Red Oak.
Spohn, James H., Cedar Bluffs.
Thomas, Charles H., West Union.
Vierth, Joseph, Jesup.
Vorse, Charles S., Des Moines.
Yost, John L., Cassapolis, Mich.
Watson, Geoge, D., Iowa City.
Worley. A. H, Bporavt.

Allin, Letitia S., Iowa City.
Bowman, Rosa, Solon.
Camp, K. L., Davenport.
Campbell, Lucy, Blue Grass.
Casebeer, S. J., Tipton.
Charles, Lucy W., Iowa City.
Charles, Mattie, Iowa City.
Cool, Alice, Monticello.
Deering, Mary E., Independence.
Dow, Kate, ————
Hand, Emma, Iowa City.
Hand, Hattie, Iowa City.
Humphrey, Charlotte, Tipton.
King, Florella, Washington.
Kinney, Amanda E., Iowa City.
Kost, Rosa A., Solon.
Lytle, Jennie, Washington.
McCleery, Elizabeth, Columbus C ity.
McCowan, Mollie, Lebanon, O.
McPherson, Ada, Council Bluffs.
McElwaine, Vannie, Iowa City.
Miller, Oma, Polk City.
Morse, Charlotte L., Newport.
Patterson, Lillie, Iowa City.
Porter, Virginia, West Liberty.
Powell, Sarah E., Iowa City.
Romans, H., Clinton.
Sale, Leonora, Iowa City.
Seydell, Mary, Iowa City.
Shircliff, M., Solon.
Smith, A. M., Downey.
Strahl, A. C., Iowa City.
Sweeney, Jennie, Iowa City.
Swisher, Kate, Shueyville.
Switzer, Maggie E., Iowa City.
Tyler, Nettie, Iowa City.
Whoalen, Emma, Marshalltown.
Whealen, Sallie, Marshalltown.
Wicks, Mattie, Davenport.
Woodruff, M. P., Big Springs.
Woodstock, Nettie, Iowa City.
Woodruff, Anna M., Newton.
Yearick, Alice, Washington.

SUMMARY.

Law Department	45
Medical Department	37
Normal Department	23

ACADEMICAL DEPARTMENT.

Resident Graduates	5	
Seniors	9	
Juniors	28	
Sophomores	42	
Freshmen	52	
Sub-Freshmen	136	—272
Special Students		78
		455
Counted Twice		8
Total for 1870-71		447

SECTION IV.

FACULTY AND INSTRUCTORS.

1871-2.

GEORGE THACHER,
President of the University and Professor of Mental and Moral Science.

NATHAN R. LEONARD, A.M.,
Dean of the Academical Faculty, and Professor of Mathematics and Astronomy.

GUSTAVUS HINRICHS, A.M.,
Professor of Physical Science, and Director of the Laboratory.

CHARLES A. EGGERT. A.M.,
Professor of Modern Languages and Literature.

WM. G. HAMMOND, LL.D.,
Resident Professor of Law, and Dean of the Law Faculty.

WILLIAM E. MILLER,
(Of the Supreme Court),
Professor of Constitutional and Criminal Law.

CHESTER C. COLE,
(Of the Supreme Court)
Professor of Commercial Law, and the Law of Persons and Personal Rights.

AMOS N. CURRIER, A.M.,
Professor of Latin and Greek Languages and Literature.

CHARLES A. WHITE, A.M., M.D.,
Professor of Natural Science.

STEPHEN N. FELLOWS, D D.,
Professor of Didactics.

JOHN F. DILLON, LL.D.,
(U. S. Circuit Judge.)
Professor of Medical Jurisprudence.

WM. F. PECK, M.D.,
Dean of the Medical Faculty and Professor of Surgery.

P. J. FARNSWORTH, M.D.,
Professor of Materia Medica.

W. S. ROBERTSON, M.D.,
Professor of Theory and Practice of Medicine and Clinical Science.

W. D. MIDDLETON, M.D.,
Professor of Physiology and Microscopic Anatomy.

J. C. SHRADER, M.D.,
Professor of Obstetrics, and Diseases of Women and Children.

LEONARD F. PARKER, A.M.,
Professor of the Greek Language and Literature.

ALEXANDER THOMSON, C.E.,
Assistant Professor of Mathematics.

E. H. HAZEN, M.D.,
Lecturer on Opthalmology and Otology.

MARK RANNEY, M.D.,
(Superintendent of the Iowa Hospital for the Insane.)
Lecturer on Insanity.

E. F. CLAPP, M.D.,
Lecturer on Anatomy.

WILLIAM C. PRESTON, B.Ph.,
Lecturer on Agricultural Chemistry.

MISS SARAH J. LOUGHRIDGE,
Instructor in Normal Department.

G. L. PINKHAM, A.B.,
Instructor in English Language and Literature and General History.

FRANK E. NIPHER, B.Ph.,
Assistant in Physical Science.

OTTO SCHMIDT,
Assistant in German.

Miss E. A. GRIFFITH, B.Ph.,
Assistant in Mathematics.

L. SMITH HANNA,
Assistant in Latin.

JOHN NORTH, M.D.,
Demonstrator in Anatomy, and Curator of the Museum.

R. W. PRYCE, M.D.,
Pro-Sector of Surgery.

LAW DEPARTMENT, 1871–2.

Baldwin, Charles, Jr., Keosauqua.
Bishop, George S., La Porte City.
Bruckard, Daniel W., Lancaster, Penn.
Burling, Frederick S., Col. Ter.
Carr, Edward M., Manchester.
Campbell, Alva E., Blue Grass.
Clingman, Stephen, Cedarville, Ill.
Colburn, Ernest A., Iowa City.
Cox, Edwin H., ————
Croy, John T. V., Colfax.
Delahayde, John, Grinnell.
Eaton, Willard L., Osage.
Elwell, Jo C., Waterloo.
Finn, George L., Bedford.
Fogg, George S., Panora.
Hampton, Albert C., Iowa City.
Hand, George W., Iowa City.
Hewitt, Reuben, Sangamon county, Ill.
Hoffman, William, Muscatine.
Howe, H. S., Muscatine.
Hoxie, Joseph, New York, New York.
Jones, Orville D., Richland.
Kæiser, William M., Morgan Co., Ala.
Kelley, Horace A., Burlington.
Kissick, Robert, Oskaloosa.
Lynch, Theron Y., Fairfield.
Lyon, Lucius E., Iowa City.
McAllister, Stephen S., Schuyler co., Neb
McAndrews, Peter D., Monona.
McCall, John A., Nevada.
Macy, John C., Newport, Rhode Island.
Manning, Calvin., Keosauqua.
Miller, Daniel F., Jr., Keokuk.
Mize, Thomas J., Troy.
Morris, Calvin B., Grand River.
Morrison, George R., East Springfield, O.
Names, Charles E., Wilton.
Names, De Witt F., Wilton.
Names, Loring W., Wilton.
Remley, Howard M., Oxford.
Rodman, George G., Washington.
Scofield, Charles S., Des Moines.
Scott, Joseph W., Oxford.
Slater, John W., Hartford, Conn.
Smalley, Henry D., Waverley.
Stem, Hulbert L, Jasper county.
Templin, John W., Iowa City.
Terry, William N., Washington.
Watters, George W., Downey.
Wilson, John, Helena, Nebraska.
Wood, Nathan H., Anamosa.
Wood, Oliver H., Brighton.
Wullweber, Hally G., Dubuque.
Young, Joseph W., Jr., Salt Lake, Utah

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MEDICAL DEPARTMENT.

STUDENTS.	RESIDENCE.	PRECEPTORS.
D. L. Adams	New Sharon	D. C. Morris
Chas. H. Andrews	Atlantic	D. H. Cole
Frank Benham	Cascade	L. Benham
John I. Bailey	Rochester	Shrader & Pryce
Henry L. Bawdon	Davenport	A. S. Maxwell
Wm. R. Bolding	Washington	Morgan & Cook
Sam'l. L. Barnes	Sunemin, Ill	D. E. Thomas
H. E. W. Barnes	Lacon, Ill	T. Tweedale

MEDICAL DEPARTMENT—CONTINUED.

STUDENTS.	RESIDENCE.	PRECEPTORS.
W. O. Bean	Waltham	*Practitioner*
T. J. Catlin	St. Peter	C. A. McCollom
D. W. C. Cook	New Liberty	N. B. Cotton
B. F. Carmachael	Davenport	W. F. Peck
James M. Carroll	Solan	Hanna & Darnell
J. B. Charlton	Baden	R. S. Bryce
Jos. W. Davis	Fort Madison	*Practitioner*
Lewis P. Eckles	Manchester	W. S. Robertson
Warren B. Evans	New Liberty	N. B. Cotton
Zenan C. Green	De Witt	Moore & North
Wm. M. Hilton	Laramie City, Wash. Ter.	G. F. Hilton
J. M. Hempstead	Iowa City	J. H. Boucher
Nathan Hunt	Iowa City	Shrader & Pryce
Frank Hanna	Blairstown	J. H. Boucher
Wm. A. Hawkins	Peru, Neb	J. H. Barnwell
Jesse Holmes	West Liberty	*Practitioner*
Geo. P. Johnston	Newton	P. M. Failor
John M. Jinnings	Council Bluffs	F. M. Pearman
John M. Kulp	Muscatine	W. S. Robertson
Chauncey Kimball	Iowa City	Shrader & Pryce
B. L. Louthan	Helena	J. B. Louthan
Jehu Lawis	Albion	Enoch Lewis
J. A. Lee	Jenett, Ohio	J. Beadle
M. W. Lilly	Center Point	F. W. Hunter
N. W. Mountain	Edna	
A. W. Manchester	Waubeck	H. W. Sigworth
C. K. Moffit	Chelsea	*Practitioner*
Geo. P. Neal	Columbus City	B. G. Neal
Wm. H. Nichols	Waltham	W. O. Bean
Gustavis North	Springville	J North
Dr. Wm Ott	Yatton	*Practitioner*
Charles H. Preston	Oskaloosa	*Faculty*
Cyril O. Paquin	Masonville	Wm. Robinson
Benj. H. Reynolds	Masonvlile	*Practitioner*
Charles Riterman	Brandon	J. B. Darling
Mich. Riordan	Blackinston, Mass	A. W. McClure
Frank L. Rounds	Washington	H. E. Fraser
James C. Robertson	Dutch Creek	Shrader & Pryce
Wm. H. Robertson	Dutch Creek	S. K. Spanlang
J. J. Rosseau	Washington	*Practitioner*
S. O. Stocksleger	Louden	S. Andrews
J. A. Sturgess	Washington	E. F. Clapp
Jas. A. Sherman	Aurora, Ill	S. W. Blakely
C. L. Teats	Crystal	R. Teats
H. H. Virsen	Pella	
Thos. R. Ward	Oxford	Shrader & Pryce
Jas. N. Wilson	Brandon	E. D. Wilson
Jas. A. White	Iowa City	Prof. White
C. L. Webber	West Union	S. C. Robinson
C. F. Waldron	Davenport	W. D. Middleton
H. A. Worley	Davenport	P. H. Worley
F. B. H. Wing	Aurora, Ill	O. D. Howell
V. S. Wilcox	Millersburg	Shrader & Pryce
Miller Young	Mt. Pleasant	W. Bird

MEDICAL DEPARTMENT—CONTINUED.

STUDENTS.	RESIDENCE.	PRECEPTORS.
Miss M. A. Cleaves	Davenport	W. F. Peck
Mrs. Pella Hay	Iowa City	Moon & North
Miss Lizzie Hess	Iowa City	*Faculty*
Miss R. Hanna	Burlington	—— Gilmore
Mrs. M. B. Jennings	Council Bluffs	J. M. Jennings
Mrs. J. A. Preston	Iowa City	Wm. Vogt
Miss C. M. Ronnald	Grand View	J. H. Graham
Mrs. A. A. Shepard	Iowa City	J. H. Boucher
Mrs. I. G. Whitfield	Parkersburg	W. Whitfield

NORMAL CLASS.

Andrews, Jessie, Iowa City.
Camp, Kate L., Davenport.
Cool, Alice L., Monticello.
Deering, Mary E., Independence.
Kinney, Amanda, Iowa City.
Lloyd, Louisa F., Iowa City.
Musselman, Clara B., Fairfield.
McCowan, Mary T., Lebanon, Ohio.
Odell, Alice, Greeley.
Patterson, Lillie L., Iowa City.
Persing, Georgia, Elmwood.
Romans, Hannah, De Witt.
Ward, Anna B., Oxford.
Whiting, Eva, Onawa.
Wicks, Mattie, Davenport.

Free, Albert T., Toledo.
Kennedy, John A., Iowa Falls.
Lytle, Wm., Washington.
McClellan, Geo. F., Stanwood.

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1871-72.

ACADEMICAL DEPARTMENT

RESIDENT GRADUATES.

Heizer, A M., A. B., Iowa City.
McClain, Emlin, B. Ph., Iowa City.
Myers, Mary, A. B., Iowa City.
Shepard, Kate, A. B., San Francisco.

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SENIORS.

Anderson, W. B., Washington.
Anderson, J. E., Lake Mills.
Boyd, R. A., Washington.
Cousins, E. B., Red Oak.
Craig, W. B., St. Johns. Neb.
Fitch, R. E., Toledo.
Hanna, H. W., Marengo.
Houston, S. B., Greenwood.
McClellan, G. F., Stanwood.
Medes, W. J., Keokuk.
Lytle, Wm., Washington.
Powers, LeGrand, Preston, N. Y.
Saunderson, Robert, Fairfax.
Swisher, A. E., Shueyville.
Switzer, Frank, Fairfield.
Wilson, D. L. Ladora.

Eaton, Lida, Iowa City.
Fairall, Mary E., Iowa City.
Milliken, Priscilla, Biggsville, Ill.

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JUNIORS.

Anderson, D. M., Washington.
Baker, A. T., Lewport Center.
Berryhill, J. G., Iowa City.
Byram, A. B., Janesville.
Forbes, W. M., Rock Grove City.
Glass, R. C., Luana.
Guthrie, G. W., Troy.
Johnson, M. N., Decorah.
Hughes, S. M., Muscatine.
Kellogg, A. E., Tabor.
Ketner, W. B., Oskaloosa.
Kooger, W. G., Richmond.
Macy, N. W., Springdale.
Mattison, Thomas, Oskaloosa.
Myers, D. A., Gettysburg, Ohio.
Osmond, Wm., Osceola.
Seerley, H. H., South English.
Shafer, A. C., Mt. Ephraim, Ohio.
Sheldon, Albert, Tipton.
White. C. E., Iowa City.
Williams, A. O., Clinton.
Williams, T. J., Iowa City.

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Kauffman, Lou. S., Iowa City.
Rogers, U. M., Iowa City.
Satterthwaite, C. J., Muscatine.
Terrell, Mary A., Iowa City.
Underwood, Mary, Muscatine.
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SOPHOMORES.

Barnett, L. C., Davenport.
Berger, C. A., Iowa City.
Bond, C. A., Copi.
Burkart. H. L., Marshalltown.
Burk, W. D., Wilton.
Brush, Frank E., Charles City.
Chambers, H. J., Iowa City.
Fairall. H. S., Iowa City.
Fitch, E. E., Fayette.
Griffiths, J. L., Iowa City.
Hanna, R. P., Burlington.
Hiatt, Harmon, Oskaloosa.
Houston, Wm., Fairfield.
Neiman, J. N., Tipton.
Rogers, W. F., Oskaloosa.
Russell, G. P., Des Moines.
Sanders, Euclid, Iowa City.
Shields, Wilbur, Iowa City.
Stone, F. E. Waukon.
Swisher, J. P., Shueyville.
Tibbetts, G. W., Belfast, N. Y.
Tisdale, W. D., Des Moines.
Young, W. J., Albia.
McCloud, E. S., Talleyrand.
Murphey, Dennis, Iowa City.

Bailey, M. E., Biven's Grove.
Craven, Annie, Oskaloosa.
Murphy, Lavanda, Iowa City.
Prescott, Alice, Enterprise, Miss.
Smith, Lucy F., Iowa City.
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FRESHMEN.

Ames, Alva, Johnson.
Brainard, O. H., Iowa City.
Byington, R. W., Iowa City.
Cotton, J. G., Pella.
Cone, J W., Conesville.
Chalfant, A. E., Iowa City.
Clark, G. D., Fairfield.
Craven, E. W., Oskaloosa.
Finkbine, Charles, Iowa City.
Flickinger, A. T., Winthrop.
Flickinger, I. N., Winthrop
Free, A. T., Toledo.
Gibbs, Frank, Iowa Falls
Hall, J. T., Aledo.
Hasner, E. E, Independence.
Hesse, F. T., Lyons.
Jack, C. B., Iowa City.
Lamb, J. W., Toledo.
Lovelace, Chauncy, Iowa City.
Lowrey, E. W., Round Grove.
Manson, R. B., Waterloo.
Osmond, J. K., Iowa City.
Parvin, T. W., Iowa City.
Ramsdell, C. L., Young America, Ill.
Scott, J. T., Luana.
Seerley, J. J., South English.
Skiles, H. P., Walcott.
Slagle, F. M., Fairfield.
Slagle, B. W., Fairfield.
Swafford, C. C., Iowa City.
Sweeney, M. L., Albia.
Teller, George, Albia.
Teller, Isaac, Albia.
Willigood, E. A., Marshalltown.
Wilson, R. J., Fairfield
Woodrow, Thomas, Altoona.
Wright, C. C., Des Moines.

Clarles, Lucy, Iowa City.
Clark, Lizzie, Iowa City.
Clites' Maggie, Iowa City.
Cochrane, Lillie, Davenport.
Dana, A. M., Pella.
Ensign, Laura, New Hartford.
Evans, L. D., West Liberty.
Helgeson, R. T., Decorah.
Hepburn, Edith, Clarinda.
Hughes, Lou S., Iowa City.
Hughes, Emma, Iowa City.
Johnson, P. B., Decorah.
Kinney, Fiorence, Iowa City.
Lovelace, L. E., Iowa City.
Osmond, Ella, Iowa City.
Phelps, Sarah, Madden, Ill.
Remley, Clara, Oxford.
Tantlinger, Alice, Tiffin.

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SUB-FRESHMEN.

Alt, Albert, Johnson.
Bain, J. H., North Liberty.
Beem, J. T., Ladora.
Billingsley, Ray, Iowa City.
Bowman, S. C., Andalusia, Ill.
Boucher, Frank, Iowa City.
Bridenstine, S. J., North Liberty.
Brown, Caleb, Muscatine.
Burneson, A. J., Dryden.
Cohick, W. S., Iowa City.
Cowley, J. W., ———
Clapp, Charles, Iowa City.
Clapp, Lewis, Iowa City.
Cowgill, G. T., Albion.
Draper, A. D., Marshalltowa.
Davidson, H., Washington.
Dunton, G. W., Belvidere, Ill.
Fannon, W. H., Decorah.
Forester, B. T. J., Atlantic.
Fellows, Albion, Iowa City.
Frazee, J. S., Toledo.
Given, A. M., Des Moines.
Greene, W. R., Muscatine.
Hanna, A. J., Marengo.
Hanna, Thomas, Burlington.
Hart, N. S., Camanche,
Ingraham, George, Millersburg.
Lee, Isaac, Iowa City.
Lee, Alfred, Iowa City.
Leonard, L. O., Iowa City.
Livingstone, T. W., ———
Lucas, Robert, Iowa City.
Lufkin, Charles, Glenwood.
Lyon, Frank T., Stellapolis.
Lytle, S. S., Washington.
Loughridge, W. A., Oskaloosa.
McConnell, J. J., Ainsworth.
Moorehead, H., Ida.
Murphy, O. M., Des Moines.
Parmalee, H. C., Omaha, Neb.
Patterson, R. C., Newton.
Pollard, J. J., Roselle, Ill.
Polley, J. F., Monona.
Rankin, Wm., Iowa City.
Read, W. H., Fairfield.
Read, J. J., Blackberry, Ill.
Rohde, Frederick, Durant.
Saylor, G. S., Saylorville.
Schoonover, A. D., Monticello.
Shambaugh, J. E., Brush Creek.
Sheets, James, Iowa City.
Shortley, John, New Hampton.
Showalter, W. C., Washington.
Soper, —, Clinton.
Spencer, Robert, Iowa City.
Swank, Louis, Huron.
Todd, H. D., Baden.
Tolles, P. B., Glenwood.
Watson, G. A., Washington.
Watters, Labana, Washington.
Westfall, J. B. W., Iowa City.

Brant, Allie, Des Moines.
Brown, Dora, Iowa City.
Campbell, Ella, Zoar.
Chase, Martha, Sac City.
Clark, Florinth, Iowa City.
Clark, Allie, Iowa City.
Cook, Sarah T., Ripon, Wisconsin.
Gaston, Ada, Iowa City.
Gray, Belle, Iowa City.
Hall, Anne.
Harrison, Emma, Iowa City.
Holmes, Ella V., Iowa City.
Hull, Celia, Marshalltown.
Johnson, Ella, Iowa City.
Johnson, Leora, Iowa City.
Lee, Blanche, Iowa City.
Linderman, Sarah, Davenport.
Marshall, Saretta, Iowa City.
March, Eva, Jesup.
Martin, Carrie H, Iowa Falls.
McKensie, Louisa, Hampton.
McKensie, Emma, Hampton.
Moon, Mollie, Iowa City.
Neiman, Ella, Tipton.
Osmond, Ida, Iowa City.
O'Leary, Helene, Iowa City.
Owen, Mattie, Iowa City.
Parker, H. J., Iowa City.
Rankin, Emma, Iowa City.
Riley, Josephine, North Liberty.
Safford, Mary, Hamilton, Illinois.
Sanders, Kate, Iowa City.
Shepard, Fannie, San Francisco, Cal.
Skales, Lizzie, Iowa City.
Selby, Anna E., Iowa City.
Seymour, Emma, Iowa City.
Smith Emma, Mt. Pleasant.
Smith, Mary E., Richmond.
Smith, Anna M., Downey.
Swafford, Mary, Iowa City.
Thompson, Emma, Iowa City.
Wheaton, Loraine, Iowa City.
White, Allie, Iowa City.
Williams, Josephine, Iowa City.
Williams, Emma, Iowa City.
Wood, Mattie, Iowa City.
Woods, Sadie, Fairfield.
Winsett, Vena, Gilbertsville.

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SPECIALS.

Adams, C. B., Iowa City.
Aldrich, J. H., Ida.
Clark, Perry, Iowa City.
Coast, Oscar R., Iowa City.
Fullinwider, Thomas, Kossuth.
Hutchins, C. B. Algona.
Henley, H. M., Davenport.
Hull, Abijah H., Wassonville.
Kling, Ira C., Lime Creek.
Luse, W. C., Des Moines.
McFaddon, Bernard, Iowa City.
McClelland, P. W., Postville.
Moon, M. B, Iowa City.
Morsman, A. H., Iowa City.
Patterson, C. C., Washington.
Shafer, E. H., Mt. Ephraim, Ohio.
Thompson, J. A., Oskaloosa.
Vorse, C. S., Des Moines.
Walker, J. A., Princeton.
Vierth, J. H., Jesup.
Wood, J. S., Boonsboro.

Koogler, Augusta, Richmond.
Mastellar, Annie, Oskaloosa.
Meacham, M. L., Clay.
Mordoff, Lou, Iowa City.
Morse, Lottie, Iowa City.
Reed, Minnie, Belle Plaine.
Richards, Ida, Richmond.
Sperry, Lizzie, Iowa City.
Strahl, Wilda, Iowa City.
Sweeney, Jennie, Iowa City.

Tanner, A. R., Hopewell.
White, Lottie, West Branch.
Woodstock, Nettie, Iowa City.
Whealen, Sallie, Marshalltown,
Allin, L. S., Iowa City.
Barlow, M. E., Victor.
Cool, Mary, Monticello.
Cressey, E. L., Des Moines.
Eastman, E. G. C., Iowa City.
Ellis, Clara B., Iowa City.
Frantz, M., Iowa City.
Gans, Flora, York Center.
Hance, Mattie, Biven's Grove.
Hand, Hattie, Iowa City.
Heudtless, Hattie, Iowa City.
Jacque, Lillia V., Iowa City.
Kibler, Sarah, Windham.
King, Agnes, ————

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1870.

GRADUATES.

BACHELOR OF DIDACTICS.

Bloor, Samantha Cranston,
Bettesworth, Jennie,
Chambers, Eunice,
Kauffman, Louisa,
Lloyd, Isabella Henrietta,
Meacham, Lucretia Emma,
McCrory, Georgie S,
Parker, Mary Webb,
Sanders, Elma Ann,
Satterthwaite Clara, Jay,
Shepherd, Lavinia,
Welch, Mary Stone.
—18.

Carse, John Henry,
Fairbrother, Joseph Albert,
Haddock, George Boyd,
Helm, Joseph Church,
Matthews, Joseph Clark,
Odell, Benjamin Franklin.
—7.

BACHELOR OF ARTS.

Graves, Sarah Virginia,
Myers, Mary Elizabeth,
Shepard, Kate Ford.
Cook, Justin Edwards,
Hiatt, Amos, Jr..
Matthews, Joseph Clark.
Schell, James Perry. —7.

BACHELOR OF PHILOSOPHY.

Brown, William Edwin,
Harrington, Clinton Orr,
Hoffman, William,
Jenks, Arthur Perry,
Nipher, Frank Eugene.
Pickler, John Alfred,
Preston, Charles Hicklen. —7.

BACHELOR OF SCIENCE.

Doe, Edward Madison.

BACHELOR OF LAWS.

Acers, John T.,
Baker, E. Warren,
Baker, Seth L.,
Ball, George W.,
Crosby, W. Otis,
Ferguson, Arthur N.,
Fuller, William E.,
Glass, John D.,
Hanna, Newton,
Herring, Ebenezer,
Kirk, Ralph H.,
Ladd, Oliver M.,
LeRoy, Millard F.,
McPherson, Smith,
Mills, Milton A.,
Redman, William H.,
Stidger, Nathan H.,
Sucksdorf, Henry F.,
Wolfe, Patrick B. —19.

1871.

BACHELOR OF DIDACTICS.

Bnjamin S. Baker,
Ernest A. Colburn.
William S. Domer,
John A. Gillespie,
Perry N. Gordon,
Lawrence Hanson,
Marvin R. King,
Dennis A. Watters,
Eleanor Bettesworth,
Edith E. Brown,
Annis M. Dana,
Antoinette M. Dick,
Mary K. Hedges,
Sarah J. Hinman,
Sarah A. Luse,
Anna E. Paige,
Amanda M. Rodgers,
Mattie E. Rudd,
Mary Ryan,
Lizzie Sperry,
Ella M. Wilcox. —21.

DOCTORS OF MEDICINE.

Page, Norman R,
Tulloss, Nathan H.
Potter Isaac L.
—3

BACHELOR OF LAWS.

Barclay, James T.
Brown, Cassius M.
Callender, Darius F.
Conniff, Thomas, H. Jr.
Doe, Edward M.
Dose, John C.
Greene, Sturgis H.
Hamilton, Alphius L.
Hine, Franklin
Ingham, Thomas E.
Sindberg, John A.
Lyman, Jacob P.
Lynch, William A.
Melvin, Joel H.
Morris, Edward T.
Nimocks, George, W.
Patterson, Calvin A.
Ranck, Cyrus S.
Sears, Reuben E.
Simenson, Rasmus J.
Smith, Arthur L.
Snow, Eugene E.
Snyder, Theodore B.
Van Camp, Andrew N.
Van Winkle, William T.
Wright, Samuel D.

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BACHELOR OF PHILOSOPHY.

James R. Wiley
Emlin McClain,
M. Ellen Skales,
Lizzie Griffith,

—4

BACHELOR OF ARTS.

J. Albert Fairbrother,
Albert Longhridge,

—2.

TABLE OF MEMBERS ACCORDING TO CLASSES.

YEARS.	Introductory.	Special Students.	Sub-Freshmen.	Freshmen.	Sophomores.	Juniors.	Seniors.	Normal.	Medical.	Law.	Resident Graduates.	Total.	Total Graduates.
1869-70.	149	.....	87	49	27	13	14	62	.....	36	2	439	52
1870 71.	.....	78	136	52	42	28	9	23	37	45	5	455	66
1871-72.	.....	49	109	55	30	27	19	20	72	54	4	439	.....

REMARKS.—It must be remembered that the number above given *for the current year* are those of the first term only, and that, judging from past experience, the aggregate will have become much larger at the time of the publication of our annual catalogue in May next.

It is also deserving of notice, as a remarkable and very important fact, that in this, the SECOND year since its organization, the MEDICAL DEPARTMENT has a class of more than SEVENTY STUDENTS.

And it is not less worthy of consideration that, in the Law Department, the yearly average attendance, which was only 10⅔ during its existence as the *Iowa Law School*, in Des Moines, has, since its incorporation with the University, increased to forty-five.

The whole number of students during the time covered by this report being, as is shown in the above table, it is still true that there have been only about nine hundred and seventy-five different persons. This apparent discrepancy is owing to the fact that many students are enrolled not once only, but twice or thrice, according to the period of their connection with the University, a discrepancy that will become greater from year to year as the proportion increases of those who extend their course of study through a term of years.

Of these nine hundred and seventy-five young men and young women, two hundred and sixteen are enrolled as residents of Johnson county; but of these thirty-five belong to families that have moved from distant points to the vicinity of the University in order to avail themselves of its educational facilities. From this it follows that the number of students in the foregoing lists, whose homes may properly be regarded as located in the immediate neighborhood of the University, is much less than one-fourth of the whole, and *very much* smaller than in former years, when the institution was sarcastically called "the Johnson County High School."

SECTION V.

ADMISSION TO THE SEVERAL DEPARTMENTS.—COURSES OF STUDY, EXPENSES, DEGREES, ETC.

ACADEMICAL DEPARTMENT.

GENERAL PLAN.

The full course of instruction in the ACADEMICAL DEPARTMENT occupies five years.

During the first three years, all the students who intend to complete this course, pursue, with one exception, the same studies, and in the same order, dividing their time equally between Literary and Scientific studies.

The studies of the last two years are elective, and arranged under the heads of Literary and Scientific, constituting two courses of equal grade.

At the close of Sophomore year, each student elects one of these courses, and during every term of his Junior and Senior years is required to pursue *three* studies, of which *two* at least must be from his elected course.

SPECIAL STUDENTS.—Any person complying with the terms of admission given below (*those in reference to Latin excepted*), is allowed to select from the general course such studies as he may prefer, *under the direction of the Faculty;* or to follow a prescribed course preparatory for admission to the Normal Department.

All special students recite in the Academical classes, and sustain, in all respects, the same relations as other students to the University.

RESIDENT GRADUATES.—Graduates of this, or other institutions, desirous of prosecuting studies not included in their undergraduate course, may, on consultation with the President, become connected with the University for that purpose, and avail themselves of such facilities as the several chairs of instruction afford.

TERMS OF ADMISSION.

APPLICANTS for admission to the Sub-Freshman class must be at least fourteen years of age, and proportionally older, if desirous of entering a higher class.

They must present testimonials of good moral character, and if coming from other institutions, must be furnished with certificates of dismission in good standing.

Regular Examinations of candidates are held in University Hall, on Monday and Tuesday of Commencement Week, and on the Tuesday and Wednesday next preceding the opening of the Fall Term, in September, at eight o'clock A. M., and include the following studies:—

English Grammar;
Geography;
History of the United States;
Arithmetic;
Algebra, to Quadratics;
Latin Grammar and Reader;
Cæsar's Commentaries—one book.

N. B.—Failure to pass the examination in Latin does not necessarily exclude an applicant from the privileges of this Department, but facilities for making up the deficiency are provided *in the University.*

Candidates for admission to an advanced standing *are examined in the preparatory studies* above named, *and in those gone over by the class which they may desire to enter.*

COURSE OF STUDY.

SUB-FRESHMAN CLASS.

FALL TERM.

Mathematics.—Algebra—*Robinson's University.*

Physical Science.—Elements of Physics. Experimental demonstrations of facts and laws, according to *Hinrichs' Elements of Physical Science.*

Latin.—Cicero—(Select Orations;) *Harkness.* Grammar, and Prose Composition.

German.—Elementary Grammar.

English.—Analysis and Composition.

WINTER TERM.

Mathematics.—Algebra—Continued.

Physical Science.—Elements of Chemistry. Experimental demonstrations as last term.

Latin.—Virgil.—*Chase and Stuart.* Prose Composition—continued.

German.—Whitney's Reader, with Grammar.

English.—Analysis and Composition.

SPRING TERM.

MATHEMATICS.—Algebra and Geometry (Books I. and II.)—*Robinson's University.*

PHYSICAL SCIENCE.—Elements of Cosmical Physics. Observations of the principal phenomena of Cosmical Physics, according to *Hinrich's Elements of Physical Science.*

LATIN.—Virgil. Prose Composition.

GERMAN.—Whitney's Reader, with Grammar.

ENGLISH.—Analysis and Composition.

FRESHMAN CLASS.

FALL TERM.

MATHEMATICS.—Geometry (Books III, VI.)—*Robinson's University.*

PHYSICAL SCIENCE.—Principles of Physics, with experimental demonstration.

LATIN.—Cicero.—(De Senectute and Amicitia.) Prose Composition completed.

GERMAN OR GREEK. —Narative Prose. —Harkness' First Greek Book, and Crosby's Grammar.

ENGLISH.—Exercises in Composition.

WINTER TERM.

MATHEMATICS.—Geometry and Plane Trigonometry.—*Robinson.*

PHYSICAL SCIENCE.—Principles of Chemistry, with experimental demonstrations.

LATIN.—Livy.

GERMAN OR GREEK. —Historical Prose. First Greek Book. Xenophon's Anabasis.

ENGLISH.—Exercises in Composition.

SPRING TERM.

MATHEMATICS.—Surveying and Leveling.—*Gillespie.*

PHYSICAL SCIENCE.—Principles of Cosmical Physics, with observations.

LATIN.—Horace. (Odes and Epistles.)

GERMAN OR GREEK. —Classical Drama. (Schiller's Tell) Anabasis. The outlines of Grecian History.

ENGLISH.—Exercises in Composition.

SOPHOMORE CLASS.

FALL TERM.

MATHEMATICS.—Spherical Trigonometry and Theory of Equations.—*Robinson.*

NATURAL SCIENCE.—Physiology.—*Huxley.*

LATIN.—Horace. (Odes and Ars Poetica.)
GERMAN OR GREEK.—Classical Drama. (Schiller's Mary Stuart.]
GREEK.—Anabasis.
ENGLISH.—Preparation of Themes and Elocution.

WINTER TERM.

MATHEMATICS.—Analytical Geometry, Chapter I., Secs. 1 and 2.—*Ray.*
ASTRONOMY.—Descriptive Astronomy.
LATIN.—Tacitus. (Germania and Agricola.) Bojesen's Manual of Roman Antiquities.
GERMAN OR GREEK.—Thirty Year's War.—*Schiller.*
GREEK.—Xenophon. (Memorabilia.
English.—Preparation of Themes and Elocution.

SPRING TERM.

MATHEMATICS.—Analytical Geometry (to part II).—*Ray.*
NATURAL SCIENCE.—Botany.—*Gray.*
LATIN.—Cicero. (Tusculan Disputations.)
GERMAN OR GREEK.—Classical Drama.
GREEK.—Schiller's Wallenstein. (Memorabilia.)
ENGLISH.—Preparation of Themes and Elocution.

Candidates for the degree of B. Ph. may substitute the French of the Junior Class for the Latin of the Sophomore year.

JUNIOR CLASS.

FALL TERM.

Literary.

LATIN.—Quintillian. (Institutes.)
GREEK.—Homer's Iliad.
FRENCH.—Otto's Grammar.
GERMAN.—History of Literature. (*Lectures.*)
RHETORIC.—Rhetoric.
HISTORY.—Ancient.
ENGLISH.—Early English Literature. March's Anglo Saxon Grammar.

Scientific.

MATHEMATICS.—Analytical Geometry Part II. Descriptive Geometry.
NATURAL SCIENCE.—Zoology.—*Tenney.*
PHYSICAL SCIENCE.—Descriptive Mineralogy. Agric. Chem., I. Qualitative Analysis, I.

WINTER TERM.

Literary.

LATIN.—Quintilian.
GREEK.—Æschines De Corona.

Scientific.

MATHEMATICS.—Differential Calculus.—Shades, Shadows, and Perspective.

FRENCH.—Knapp's Reader.
GERMAN.—History of Literature. *Lectures* (in German.)
LOGIC.—McCosh.
HISTORY.—Mediæval.
ENGLISH.—Milton.
NATURAL SCIENCE.—Comparative Anatomy, and Physiology.
PHYSICAL SCIENCE.—Physical Mineralogy. Agric. Chemistry, II. Qualitative Analysis, II.

SPRING TERM.

Literary.

LATIN.—Plautus, (Captivi.)
GREEK.—Demosthenes De Corona.
FRENCH.—Knapp's Readers.
GERMAN.—Gœthe's Egmont.
HISTORY.—Modern. Science of Government. Evidences of Christianity.
ENGLISH.—Bacon. (History of Language.)

Scientific.

MATHEMATICS.—Integral Calculus.
DRAWING.—Isometrical and Mechanical.
PHYSICAL SCIENCE.—Molecular Science. Agricultural Chemistry, III. Qualitative Analysis, III.

SENIOR CLASS.

FALL TERM.

Literary.

LATIN.—Juvenal. Latin Composition throughout the year.
GREEK.—Plato. (Gorgias.)
FRENCH.—Classical Comedy.—*Moliere.*
GERMAN.—Lectures on Recent Literature.
PHILOSOPHY.—Mental.
ENGLISH.—Shakespere.
ITALIAN.—Grammar and Reader. Lectures on Comparative Philology.

Scientific.

MATHEMATICS.—Analytical Mechanics.
ENGINEERING.—Hencks' Field-Book, and Topographical Surveying.
ASTRONOMY.—Celestial Mechanics.
PHYSICAL SCIENCE.—Quantitative Analysis, I. Higher Physics, I.

WINTER TERM.

Literary.

LATIN.—Lucretius.
GREEK.—Æschylus. (Prometheus.)
FRENCH.—Historical Prose.
GERMAN.—Lectures on Recent Literature.
ITALIAN.—Divina Comedia.—*Dante.*
PHILOSOPHY.—Mental.
English Literature.—*Spencer.*

Scientific.

ASTRONOMY.—Planetary.
NATURAL SCIENCE.—Geology.—*Dana.*
ENGINEERING.—Strength of Materials, and Construction of Bridges and Arches.
PHYSICAL SCIENCE.—Quantitative Analysis, II. Higher Physics, II.

SPRING TERM.

Literary.

LATIN.—Cicero pro Cluentio.
GREEK.—Sophocles (Electra), or Modern Greek.
FRENCH.—Classical Drama.—*Racine.*
GERMAN.—Lectures on Recent Literature.
ITALIAN.—Divina Comedia.—*Dante.*
PHILOSOPHY.—Moral.
SOCIAL SCIENCE.—Political Economy.
ENGLISH.—Chaucer.

Scientific.

ASTRONOMY.—Stellar.
ENGINEERING.—Designs and Drawings of Structures.
NATURAL SCIENCE.—Special Geology and Palæntology.
PHYSICAL SCIENCE.—Quantitative Analysis, III. Higher Physics, III.

ANCIENT AND MODERN LANGUAGES.

The rooms of the instructors in Ancient and Modern Languages are supplied with means of illustration, such as maps, charts, stereoscopic views, drawings, etc., and the library is specially rich in texts, the latest works on Comparative Philology, and the best books of reference.

MATHEMATICS AND ASTRONOMY,

The Department of Mathematics and Astronomy is provided with,—1st. A choice collection of the best English and American treatises on the higher branches of pure and applied mathematics. 2d. A complete set of engineers' and surveyors' instruments. 3d. A very fine prismatic sextant, and an equatorial telescope.

THE CABINET, AND MEANS OF ILLUSTRATION IN NATURAL SCIENCE.

The Geological Department of the Cabinet is especially valuable as regards our own State, from the fact that all the collections of the State Geological Survey were, by law, given to the University. From time to time collections are being added from equivalent strata elsewhere, as well as from formations that are not represented in Iowa.

In the Zoological department, also, the principal aim has been to prepare material for instruction, rather than for exhibition. Accordingly, much attention has been given to the preparation of alcoholic and dry specimens, and to dissections for illustration before the classes. The Cabinet already contains many mounted specimens of our indigenous mammals, birds, reptiles, fishes, insects, crustaceans, shells, etc., besides which the valuable private cabinet of the professor is kept at the University for use.

The collections of our native plants in the herbarium are important, and steadily increasing.

Two good microscopes are kept for frequent use in all the classes. The supply of charts, diagrams, models, stereoscopic views, etc., is unusually complete for illustration in Geology, Zoology, Botany, and Physiology.

THE LABORATORY

The Laboratory of Physical Science is open to students every school day, from 8 till 11 A. M., and from 1 till 5 P. M., in fall and winter, or from 2 till 6 P. M. in summer.

The Laboratory occupies the entire first story of the north building, and covers an area of 3,500 square feet. The rooms are provided with cases, containing extensive collections of chemicals, crystals, minerals, rocks, and a cabinet of physical and chemical apparatus. Tables are provided with fixtures and apparatus for the student's work. The special Laboratory Library embraces many of the best works and periodicals on the different branches of physical science.

The following Laboratory courses are in operation:

A. GENERAL COURSES.—Two years. Demonstrations of elements and principles, as mentioned in plan of study (p. 28.)

The demonstrations are not merely qualitative, but usually, also quantitative. All quantitative determinations have to be reduced by the student, either by calculation or by construction. For specimens of such demonstrations, we refer to the School Laboratory of Physical Science (noticed on p. 38).

B. ELECTIVE COURSES.—To gain admission into these more special courses, the student must have completed the above courses of the Sub-Freshman and Freshman years.

I. *Qualitative Chemical Analysis.*—Each of the following courses is equivalent to one term's study, but students may select partial courses. The Laboratory expenses vary from $5 to $10 per term.

a. Simple Compounds and Special Tests.
b. Complex Compounds.
c. Determinative Mineralogy.
d. Qualitative Examination of Waters, Rocks, Ashes, etc.
e. Chemical and microscopic examinations of commercial articles (food, etc.)
f. Pure Toxicology.

II. *Quantitative Chemical Analysis.*—The student must have completed the courses a and b of qualitative analysis, in order to be admitted to any of the following courses. Each of these full courses is equivalent to one year's study; partial courses may be taken at the option of the student. Laboratory expenses, from $15 to $25 per term:—

a. Technical Analysis.—*Bolley.*
b. Volumetric Analysis.—*Mohr.*
c. Gravimetric Analysis.—*Fresenius.*
d. Assaying.—*Kerl* and *Plattner.*

III. *Mineralogy, Crystallography, and Molecular Science.*—One year. *Hinrichs'* Principles of Pure Crystallography, etc.

IV. *Higher Experimental Physics.*—One year.

EXAMINATIONS.

There is a public examination,—both written and oral—at the close of each term, the result of which will decide the rank of every student in this department.

A record is kept of the attainments of every student, and information concerning the same will be communicated to the parent or guardian, when rendered necessary by irregularity of attendance or a low grade of scholarship.

DEGREES.

The degree of BACHELOR OF ARTS will be conferred on every student who completes the Literary course; that of BACHELOR OF PHILOSOPHY on every one completing the Scientific course.

The degree of Master of Arts is conferred in course, upon every graduate in Arts or Philosophy of three years standing, who, in the interval, shall have sustained a good moral character, and pursued professional or other studies, and who shall *make application* for it, personally or by letter.

It is also conferred on every graduate in Arts or Philosophy in this, or any other institution in good standing, *on the completion of one year's additional study in the University, under the direction of the Faculty.*

Every one receiving the Master's degree will be subject to a charge of five dollars for the diploma.

EXPENSES.

A fee of five dollars per term, for incidental expenses. Board in families, including washing, fuel, and lights, from three to five dollars per week. Board in clubs, from two to three dollars. Room rent, two dollars per month and upward, for unfurnished rooms. The opportunities for self-boarding at low rates, are excellent.

N. B. An exemption from the payment of the incidental fee is granted, as follows:

I. To all Iowa soldiers, now citizens of the State, who served three years in the Union army, or have been honorably discharged on account of wounds, or other disability incurred in the service of the United States.

II. To all orphans of Iowa soldiers.

III. To two students from each county, who bring recommendations from the County Auditor, County Superintendent, and the clerk of the District Court.

PUBLIC WORSHIP.

A morning service, not exceeding fifteen minutes, is held on every recitation day, in the University chapel, which all the students are required to attend They are also expected to be present on the Sabbath, at one service at least, and at such places as their parents or guardians may designate, or as the students themselves may prefer.

PUBLICATIONS.

The University Reporter—Is a sixteen page monthly paper, conducted by the students, aided by contributions from the Faculty and former graduates.

Terms: One dollar per year, in advance. Address, University Reporter, Box 279, Iowa City.

The School Laboratory of Physical Science.—Edited by Prof. Hinrichs. Published quarterly, at $1 per annum.

THE LITERARY SOCIETIES,

Connected with the University, are the Erodelphian and Hesperian, composed of ladies; the Zetagathean and Irving Institute, formed of gentlemen; and the Bryant Literary Club.

IOWA CITY ACADEMY.

Under the management of Mr. Wm. McClain, is earnestly recommended as affording admirable facilities for preparation to enter the University.

GOVERNMENT.

The students are expected to comply with the requirements of morality, propriety, and courtesy during the entire period of their connection with the University.

The reputation of the University depending largely on the conduct of its members, this rule admits of no exceptions, even in vacations and on holidays, being obligatory on every student, irrespective of time, place, and circumstance. To secure its observance, the officers of the University rely chiefly on the self-respect and honor of the students, but are always ready to treat with wholesome sternness and severity all who prove themselves greatly deficient in these sentiments. When personal admonition, followed with letters home, or tempoary suspension, fails to affect the reformation of delinquents, the last resort will be their expulsion from the institution.

Such has been the government of the University from its beginning, with the happiest results; for, under it, the good order, diligence, and scholarship of the students have been such as to prove its excellence, while the necessity of severe discipline has been of very rare occurrence.

NORMAL DEPARTMENT.

TERMS OF ADMISSION.

1. Application must be made at or near the opening of the Fall term, in September.

2. Every applicant must present satisfactory testimonials of good moral character, and subscribe to the following declaration:—

We, the undersigned, hereby declare our intention to engage in the business of teaching in the schools of Iowa, and that our object in resorting to the Normal Department of the State University is to prepare ourselves for the discharge of this important service.

3. He must also pass an examination in the following studies: University Algebra, Geometry, Natural Philosophy, Chemistry, Astronomy, Physiology, Botany, Mediæval and Modern History, Analysis of the English Language, Penmanship, Book-Keeping, Vocal Music, and Linear Drawing; and is earnestly advised to qualify himself for an examination in Latin and German.

COURSE OF INSTRUCTION.

Occupying One Academic Year.

FALL TERM.

Mental Science.
Methods in Teaching.
School Economy.
Rhetoric.

WINTER TERM.

Mental Science.
Methods in Teaching.
Logic.
Science of Government.

SPRING TERM.

Moral Science.
Methods in Teaching.
Grading and Classification of Schools.
School Laws.

There is a course of Professional reading, and of Rhetorical exercises, extending through the year.

Lectures, at stated times, are delivered on various subjects related to School Management, and the Duties and Responsibilities of Principals and Superintendents of Schools.

DEGREE.

Students completing the above course of study and training receive a "State Certificate," and the degree of Bachelor of Didactics.

During the year, the branches of study taught in the public schools are reviewed.

(1.) That the students may obtain a more thorough knowledge of those branches.

(2.) To afford the students opportunity for teaching in he presence, and s ject to the criticisms of an experienced teacher.

These branches are divided and graded into steps adapted to every degree of development of children, and students are taught to present each subject to their pupils so as to lead them, consecutively, from the particular to the general—from the concrete to the abstract—from the simple to the complex.

The Normal Library and Reading Room is supplied with standard educational works, reports of city and State superintendents, educational journals, sets of school books, apparatus for primary grammar and high schools, and the students are required to spend a portion of each week in their examinations.

The members of this department share all the advantages of the Literary Societies, the University Library, Cabinet, Apparatus, Laboratory, and Scientific and Philosophic Lectures that are enjoyed by students in the Academical Department.

LAW DEPARTMENT.

Hon. W. G. Hammond, Resident Professor of Law, devotes his whole time to instruction in this Department.

Professors Cole and Miller are present in the University four months in the year for the same purpose.

COURSE OF STUDY.

The course of study is so arranged as to be completed within a single year, beginning in September, and ending at the University Commencement, the last of June. It is divided into three terms, corresponding with those of the other departments of the University. The course is intended to embrace all branches of a complete legal education, so far as practicable within the time allotted, and to prepare students for the bar of any State in the Union, special attention, however, being given to the subjects most likely to be useful in Western practice.

The following schedule presents the course pursued during the University year 1870–71:

FALL TERM.—Course of introductory Lectures on the Study of Law.—HAMMOND AND WRIGHT.

General Introduction to Municipal Law. *Walker's American Law* and *Kent's Commentaries.* (Three weeks.)—HAMMOND, WRIGHT, COLE.

Real Property Law. Lectures with references to *Kent, Blackstone, Williams on Real Property, Washburn on Real Property.* (Four weeks.)—HAMMOND.

Common Law Pleading. *Stephen on Pleading.* (Two weeks.)—WRIGHT.

Evidence. *Greenleaf on Evidence, Vol.* 1. (Two weeks.)—COLE.

Law of Torts. Lectures with references to *Hillard on Torts*, and special treatises. (Two weeks.)—HAMMOND.

Examination on studies of term, two days.

WINTER TERM.

Code Practice and Pleading. *Revision of* 1860. (Two weeks and a half.)—WRIGHT.

Criminal Law. *Blackstone, Book IV.*, and *Bishop on Criminal Law, Vol. I* (Two weeks.)—WRIGHT.

Law of Contracts. *Smith on Contracts. Parsons on Contracts.* (Two weeks.)—COLE.

Notes and Bills. *Parsons on Notes and Bills. Byles on Bills.* (Two Weeks.)—COLE.

Bailments. *Lectures. Story on Bailments. Engell on Carriers.* (Two weeks)—HAMMOND.

Law of Corporations. *Lectures. Angell and Ames on Corporations.* (One week.)—WRIGHT.

Examination on studies of term, two days.

SPRING TERM.

Equity and Equitable Interests.. *Lectures. Story's Equity Jurisprudence. Adams on Equity. Willard on Equity.* (Four weeks and a half.)—HAMMOND.

Law of the Domestic Relations. *Lectures. Schouler on Domestic Relations.* (One week.)—COLE.

Constitutional Law. *Lectures. Story on the Constitution. Cooley on Constitutional Limitations.* (One week.)—HAMMOND.

Review of entire course. *Blackstone's Commentaries.* Four weeks and a half.—HAMMOND.

Examinations on studies of term, *two days.* Examination of graduating Class, for degrees of LL. B., *two days.*

During the *entire year*, Moot Courts every Mondayafternoon. Course of Public Lectures, by gentlemen of the bar, on Wednesday afternoons. Synopses of reading by the class, on Friday afternoons. A course of lectures on the *Civil Law, and its Utility in American Practice*, and one on the *History of English Law*, will be delivered by Chancellor Hammond, during the year. Meetings of the Wright Society every Friday evening.

A permanently organized society, for mutual improvement in debate, called the "Wright Society," conducted entirely by the students, is connected with the department, and has been for some years in successful operation.

ADMISSION.

No preliminary examination is required for admission, and students may enter at any time during the year; but as the order of studies is so arranged as to form a progressive and systematic course, they are advised, whenever convenient, to commence with the year, or at least, with the beginning of a term.

Attention is called to the fact that the rules of the department make no provision for admission *to advanced standing*. Those who enter after the beginning of the year will go on with the class from the point already reached in the course of study; but, if candidates for graduation, will be required to attend for *three full terms* before being admitted to the examination for a degree.

LIBRARY AND TEXT-BOOKS.

The library of the department contains about two thousand volumes of treatises and reports, selected within three years past, for the use of the school. All new treatises of value to the student are added to it as fast as they appear, and the collection of reports will be enlarged as rapidly as the funds granted for that purpose by the Regents will admit. It already includes the reports of nearly all the Northern States, with a large collection of English and Federal reports. The library is open every day in the term, from 8 A. M. to 5 P. M., and students of the department have free access to it for purposes of study and reference. Especial attention is directed by the instructors to familiarizing the class with the contents of the library, and teaching them to look up authorities, make up briefs,—in short, training them to find for themselves the law upon any subject desired. No volume can be taken out of the library, except for use at recitation or moot-court, in the lecture-room adjoining.

Until this year, students have been required to provide themselves with all the text-books used in the recitations. It is still recommended that those who conveniently can, should do so, the works employed being all of standard value to the practicing lawyer; arrangements are made by which students of the department can purchase them at a very considerable discount from the ordinary price. All the books used in the recitations may thus be purchased for a sum varying from fifty to sixty dollars, according to the editions used; or second-hand ones may usually be obtained for something less than the former sum. The number and cost of works of reference, parallel reading, etc., will depend entirely on the taste and means of each student. It is possible to dispense with them entirely, and rely on the use of the very large collection furnished in the department library.

To accommodate those who cannot afford to purchase books the University furnishes copies of all the text-books from which recitations are required during the course, to be rented to students applying for them at a charge of ten dollars for the year. Application for them should be made at the beginning of the year, as only a limited number of students can be thus supplied.

EXAMINATIONS.

At the close of every term a written examination will be held upon all the studies of the term, usually occupying two days, and conducted by the Faculty of the department. The examination papers will be passed on by the Faculty, and then filed for the inspection of the Committee on Graduations.

The examination for a degree will be oral, and conducted by a committee of lawyers, appointed jointly by the authority of the University andthe Supreme Court of Iowa. It will be held during the week before the annual Commencement, and also at the close of each term, when there are candidates who have completed the required course. It will cover all the studies of the course; and in addition to the oral examination, the Committee will take into consideration the examination papers above referred to, and the record of each student's attendance and application during the course.

GRADUATION.

Candidates for graduation must have been members of the department for three terms, constituting the entire course, except in the following cases: Gentlemen who have already practiced law for a year or more, under license from a court of general jurisdiction in any of the United States, may become candidates for graduation after an attendance of two terms only. Attendance in any other Law School having authority to confer the degree of Bachelor of Laws, will be reckoned as equivalent to a like period in this department, to the extent of one-half the entire prescribed course, but not more.

Students fulfilling these conditions, and passing satisfactorily the examinations described above, may graduate at the close of any term. They will receive the degree of Bachelor of Laws, and will also be admitted to the bar of the Supreme Court of Iowa, admitting them to practice in all the courts of the State.

Those who graduate at the close of the spring term will receive their diplomas, and take the oath as Attorneys and Counsellors of the Supreme Court, at the public exercises of Commencement.

EXPENSES.

The tuition fees are twenty dollars per term, payable at the opening of each term, or fifty dollars for the entire course, if paid in advance. Students who have paid for the entire course, and do not find it convenient to complete the same at once, may leave the University and return the next year, or at any future time, for the remainder of their course, without additional charge.

As the Law Department receives no share of the General Fund of the University, county appointments are not available for tuition fees in this department, or any part thereof.

The tuition fee covers the entire expense of the course, so far as the institution is concerned, except the charge made for the use of text-books, as explained above No fee is charged in this department for matriculation, graduation, or incidental expenses.

Two or three members of each class can obtain a reduction of half their tuition by acting as Librarian in the Law Library. The appointment of Librarian will be made at the commencement of the school year, and at other times when a vacancy occurs. Applications for the appointment by students who are not already members of the class, should, in all cases, be made in person, and not by letter.

Board and other expenses of living are of course the same for students of this department as for others.

MEDICAL DEPARTMENT.

The system of Instruction is a most thorough combination of didactic, clinical and practical teaching.

The experience of those who have attended lectures in large hospitals, shows that a superficial knowledge of disease is liable to be conveyed to the student where so many cases are seen without the opportunity for thoroughly studying them. The aim of the faculty is to combine clinical and didactic teaching, so that due attention may be given to each.

The thorough study of practical anatomy will be required of every graduate. Our facilities for obtaining material have been perfected, so that an abundant supply will always be provided. The Lecturer and Demonstrator of anatomy will ever be ready to aid the student in his demonstrations and anatomical studies. The anatomical museum is open to students for study and research at all hours, when lectures are not in progress.

The Chemical Laboratory is open seven hours daily, for the study of practical chemistry. Courses in Chemical Analysis, Urine Analysis, and Pure Toxicology have been specially arranged for medical students.

FEES.

Lecture fees for the entire course	$20 00
Matriculation ticket	5 00
Anatomical ticket	5 00
Graduation fee	25 00
Hospital ticket	*Gratuitous.*

One of the special advantages to students attending the Medical Department of the University is, that they are permitted to avail themselves of the teachings of the other department without additional expense.

Private lectures on special subjects will be given during the course.

Graduates of other accredited Colleges will be admitted to the lectures and clinics by taking out the matriculation ticket. All fees must be promptly paid

at the beginning of the session. The matriculation ticket must be obtained before any of the Professors' tickets can be issued. All of the tickets can be secured of the Treasurer of the University. All students must be in possession of the required tickets within two weeks after the session commences. Students who have attended two full courses in some other duly recognized College, but who have, for satisfactory reasons, failed to graduate, will be admitted to all the privileges of the department upon the payment of $10, which amount will not include matriculation, nor anatomical tickets.

Good board can be obtained at from $2 50 to $4 per week. By associating in clubs, students may supply themselves with good accommodations at a material reduction from the customary prices.

REQUIREMENTS FOR GRADUATION.

The candidate must be twenty-one years of age, and of unexceptionable moral character, and must have been engaged in the study of medicine for three years, including attendance upon two courses of lectures, the last of which must have been in the Medical Department of the Iowa State University. No student will be permitted to graduate who has not pursued the study of Practical Anatomy for at least one course. Each candidate for graduation must undergo a satisfactory examination in all of the branches taught in the department, and present an acceptable thesis, which must be in his own handwriting, and on a subject connected with some branch of medicine. The candidate must notify the Dean, in writing, during the first week in February, of his or her intention to become an applicant for graduation, and at the same time present the thesis and graduating fee. In case of a failure to graduate, the fee and thesis will both be returned.

The *ad eundem* degree in this department may be conferred under the following circumstances: The candidate must be in possession of an accredited diploma, and must present letters from two respectable physicians, as to moral character and professional standing. An attendance upon lectures from time to time, is expected during the session, and a satisfactory examination must be passed on all the subjects taught in the department. From those who receive the *ad eundem* degree, the matriculation fee, and a fee of $25 will be required.

This exhibition of the courses of instruction and study in the different departments, and of the entire economy of the University, shows a rapidity of growth and an extent of facilities for general and professional education, which justify no little complacency on the part of all friends of the institution, and strong confidence also that continued success will second all future endeavors to advance its interests, if wisely directed and prosecuted with an unfaltering purpose.

In addition to this general remark, it is well to notice some of the particular features which distinguish our Academical Department from the common American College:

1. The time occupied in the entire course, which is one year more than is required by the ordinary college curriculum. This results rrom the necessity of the case. The boys and girls haye only very poor advantages in the public

schools of the State for pursuing the studies preparatory for the Freshman year. They come to us earnestly desiring to enter the University. It would be in the last degree unwise to refuse them admission. The time has not come for that, and will not have come until the standard of instruction in the primary and high schools shall have been raised far above its present grade. The only remedy for the evil is to supply *in the University* the facilities which they cannot enjoy at home. Unless we would largely diminish our numbers and deplete our classes we must furnish in our own recitation-rooms the preparatory instruction which ought to be provided in every large town, or, certainly, in every county of the State. The Sub-Freshman year is therefore, at present, a necessity from which there is no escape, that would not involve serious detriment to the important educational interests for the sake of which the University exists. So soon as the Academical course can be limited to *four* years without manifestly greater loss than gain, it should be promptly done.

2. *The Elective Courses of the Junior and Senior years.*—This arrangement has been made in the belief that the students, having pursued the studies and passed the examinations of the previous three years, ought to have attained sufficient maturity of thought and character to decide for himself, (within certain limits,) what branches of knowledge have the strongest claim on his attention for the remaining two years. In making his decision he is left wholly to his own judgment or inclination, except as he may seek counsel from those in whose wisdom he confides.

3. *Special Students.*—Great numbers of young men and young women in our State, who have a genuine thirst for knowledge, are too old or too poor to spend five long years in obtaining an education. Or perhaps their plans for life are such as in their view, do not demand a preparation so costly in respect of either time or money.

To meet the wants or the wishes of these classes of applicants for admission to our Academical Department, they are allowed to enter the University, on the same conditions as those which are prescribed for the regular students, and to pursue whatever studies they may prefer; *provided*, they are so proficient in knowledge and discipline, as to warrant success.

This is considered a very important feature of our system, for by means of it many students are every year encouraged, and permitted to avail themselves for a longer or shorter time, of the advantages afforded in the University, who would otherwise be deprived of them.

NOTE.—The very great number of typographical errors in the following pages, is due to a severe inflammation of my eyes, compelling me to commit the correcting of the proof to another person, who for some reason utterly failed to do it. G. T.

ERRATA IN ESSAY ON MATHEMATICS.

Page 62, line 15, for "study" read — the study.
Page 62, line 18, for "points" read — parts.
Page 63, line 20, for "lands" read — canals.
Page 64, line 6, for "embrace" read — embraces.

Page 65, 5th line from the top, add "and" after "connection with."
Page 65, 6th line from the top, for "on" read "upon."
Page 65, 6th line from the bottom, add "also" after "specimens are."
Page 66, 11th line from the top, for "navigation" read "investigation."
Page 66, 21st line from the top, for "model" read "models."
Page 68, 12th line from the top, for "its campus" read "its University campus."
Page 68, 21st line from the top, erase "any."
Page 69, 14th line from the bottom, for "*impractical*" read "*unpractical.*"

ERRATA IN THE ESSAY ON MODERN LANGUAGES.

Page 70. The title should be "Languages" instead of "Language."
Also, in the 4th line of the essay "Langnages of Greece and Rome."
(Other errata of this kind will not here be noticed.)
Page 71, 21st line, "productions" for "production."
Page 71, 29th line, add "and other institutions."
Page 74, 27th line, after "training" put "of."
Page 75, 10th line, omit the second "i" in "speciality."
Page 75, 4th line from below insert after "all the Greek:" "and Latin."
Page 79, 3rd line from above, "Anglo-Saxons" for "Anglo-Saxon."
Page 79, 6th line from above, "rustica" for "rustic."
Page 79, 23d line from above, "wou'd" for "could."
Page 82, 4th line, erase "watser."
Page 83, 7th line, "in the place of" for "in the force of."
Page 83, 14th line "assertions" for "operations."
Page 85, 18th line, omit "do" after "as."
Page 85, 2nd line from below, insert "as" after "inferior."
Page 86, 13th and 14th lines from top, read "accusative," instead of "accusation."
Page 86, 5th line from below, read "Greek" for "French."
Page 87, 3rd line of note, read "has formed" for "is formed."
Page 88, 10th line from top, insert "a" after "on."
Page 90, last line, insert "it" after "discipline."
Page 91, 3rd line from top, omit "it."
Page 91, 8th line from below, insert a period (.) after "should."
Page 92, 9th line from top, "their" for "the."
Page 92, 13th line from below, "gaining" instead of "giving."
Page 93, 16th line from top, insert "which" after "one."
Page 93, 17th line from top, add "es" to "express."
Page 93, 26th line from top, "chastity" for "charity."

SECTION VI.

PAPERS ON ACADEMICAL EDUCATION AND OTHER UNIVERSITY MATTERS.

I bespeak for these papers your most thoughtful consideration, and that of every member of the General Assembly. In preparing them the writers, at my suggestion, have used the largest liberty, and given a free expression of their sentiments on education in general, on their respective departments of University labor, and in regard to the urgent need of money in order to secure to their work the highest efficiency and value.

These sentiments ought to exert a weighty influence on all who have the welfare of the University at heart, because they are the careful utterances of men whom the legal guardians of the institution, of their free and deliberate choice, have placed and retained in their several chairs, as men of acknowledged ability and learning, who also may reasonably be regarded as possessing that sound judgment on educational affairs which is the almost necessary result of large experience and success in the noble calling to which they have devoted their lives.

The communication of Prof. Fellows presents a problem which will require very serious attention at your next meeting. For it involves the relations of the Normal Department to the University, to the establishment of normal schools in other parts of the State, and to the most vital interests of our common school system. Whether this department shall be continued or abandoned, and if continued, in what form it shall be sustained, are questions on the settlement of which the most successful working of that system may be found largely to depend. Should it be deemed expedient to adopt the views of

Prof. Fellows, and a plan be matured by which the members of the Senior Class in our Academical Department could pursue, at their option, some of the higher branches of normal study, the University might be able to send forth from year to year a supply of teachers possessed of rare qualifications for the government and instruction of our High Schools and Academies, already one of the most pressing educational wants of the people, and certain to become more and more pressing in proportion as the population, intelligence, and wealth of the State increases.

I respectfully recommend that this subject be referred, at your expected meeting in Des Moines, to a special committee, with instructions to report to the Board at its meeting in June, 1872.

MATHEMATICS.

BY PROF. N. R. LEONARD.

Rev. Geo. Thacher, President Iowa State University:

DEAR SIR:—I herewith submit at your request a few brief observations concerning the department placed under my care. In these I have confined my attention to a few of the general and special advantages of mathematical study, and to a statement of the principles upon which that part of our academic course is arranged.

In preparing a course of study for the youth of our State, it is certainly very desirable that the claims of each particular branch of science, language, or literature should be carefully canvassed before assigning that branch to a place in our curriculum.

The necessity of such care is increasing from year to year with the large development that is being made in almost every line of human thought and investigation.

It is now an impossibility for a student, in the brief years of his college career, to acquire even a superficial acquaintance with the entire circle of those studies which, not more than a generation ago, were comfortably compassed in a four-years' course. It is then necessary that a *selection* should be made of those branches which will

give the best culture for the great mass of our young people. In making this selection two questions should be asked in reference to every study that may seem to have a claim to a place.

First: What is its *cultivating power?*—its educational influence?

Second: What is the practical value of the facts acquired through that study, to the subsequent life and occupations of the student?

The first of these, if considered alone, would lead to the selection of such studies, and such only, as would in the given time develop the greatest mental activity, and give to that activity the best possible direction. Such education would be called *general.*

The second, if considered alone, would lead to the rejection of every study which has not for its object, either direct or proximate, the acquisition of such knowledge as will be available in the pursuits of the citizen. The culture resulting from such a course may be called *special.*

In this latter view, the mind of the pupil is to be regarded as a storehouse, magazine, or arsenal, in which it is the purpose of the educator to store the veritable implements of future warfare, together with the knowledge how to use them.

In the former view, the student is to be regarded as an incipient citizen without reference to his future avocation, and his college training is, as it were, *gymnastic,* for the purpose of insuring to him a sound mental constitution, or well developed mental muscle and power of endurance, but without aiming (except indirectly) to instruct in the particular modes in which he will afterwards find it expedient to employ his faculties.

Either of these views taken alone would prove an unsafe guide in making the proposed selection of the branches of study to be pursued. It is certainly clear that, if possible, some harmonious mean should be sought which would give the necessary intellectual training, and at the same time, as far as practicable, secure the *special* preparation requisite for the various pursuits in which the great majority of our youth will afterwards engage. Such a mean, as we shall hereafter show, has been sought, in arranging the mathematical course pursued at the University.

The value of a limited amount of mathematical study as a means of intellectual culture stands unchallenged. We must accept as of

undoubted authority on this point the concurrent testimony of the chief educators of our own and of preceding generations. The important place assigned to it in every college and university significantly indicates, either its value in this respect, or its necessity as a preparation for other studies which promote such culture. For ourselves we are content to rest its claims as an instrument of general culture upon two considerations.

The first is: that it necessitates a continuous concentration of the attention of the student, and therefore its influence is thrown toward the formation of a *habit* of close and sustained application of the mind to whatever is brought before it.

The importance of such a habit, and the great difficulty experienced in forming it, are only too well known to every teacher and scholar of even moderate attainments.

The influence of study of geometry is particularly favorable to the development of a habit of *continued* attention, since with nothing before him but his diagram, the student can only proceed to unfold the different points of his demonstration by holding in mind the connection between each premise and its conclusion, and the harmony of these various conclusions, which necessitates the truth of his theorem. If one step is omitted, all is lost, and he must begin again. If all the links in his demonstration have been well considered and joined together save one, that one will by its absence or want of connection render the whole chain useless.

The study of algebra and analytics generally while inferior to geometry for the purpose of securing *continuous* application is yet quite equal to it in regard to the intensity and concentration of effort which it demands. The second claim that this branch of study has to a place in a system of liberal education rests upon the fact, scarcely separable from those above adduced, that it leads to a more careful comparison between assumed premises and the conclusions based upon them, and thus guards against mistakes in reasoning, and aids in the detection of the fallacies and sophisms which form the most dangerous weapons of those who would propagate error.

It is not claimed that the habits formed by mathematical study are specially valuable in fitting a person for selecting out of probable truths those premises upon which he may most securely

construct his argument, but only that when the premises are once chosen it will lead him to reason correctly. For illustration:

The knowledge possessed by a pilot, while it may be all that is necessary to guide a vessel over the ocean from port to port, is yet not of the kind which would tell him whether the deck upon which he stands is or is not seaworthy.

The result of experience has so far proved the value of the discipline of mathematics that it is not an infrequent remark that when a student has once acquired such habits of application as will make him successful in his mathematical studies he is able to succeed in any other useful department to which he may give his attention.

When we come to consider the practical bearing of a course of study upon the various occupations of the citizen, or rather the connection of the knowledge thus acquired with the business of life—it is beyond dispute that mathematics—pure and applied—stands in the front rank. While this is true *universally*, it is more emphatically true in this country, and most of all in the west. The life of our citizens is to be largely devoted to the solution of material problems.

Our system of public works is doubtless still in its infancy, and destined to be indefinitely enlarged. Our railroads, lands, bridges, and tunnels, upon which, and through which the commerce of the future is to be borne are just beginning to spring into existence. The immense deposits of coal and mineral which now lie concealed beneath our soil or locked in the embrace of our mountain ranges are to be sought out and opened up for use. The solution of every one of these problems requires a more or less profound knowledge of mathematics, and altogether they are calling for an army of engineers and architects. It is certainly the part of wisdom to furnish such facilities for the training of these, that whatever structures they may rear shall be of such proportions, and of such materials as shall withstand to the last possible limit the strain which time or pressure may bring to bear upon them.

In pursuance of the views above set forth, the mathematical Course of the University has been arranged in two sections. The first embraces such a proportion, and such a selection of mathematics as is believed to be necessary for the purpose of *general* culture, and is made obligatory upon all students who would compete for any academic degree.

The studies in this section extend over three years, and are not materially different from the required mathematics of the average of our best American colleges, except that a greater prominence than usual is given to geometrical drawing.

The second section, succeeding the first in the order of time, embrace the mathematics necessary for entering the practice of the different branches of engineering.

The studies of this section are optional. Those who seek a literary or general culture may omit these. But on the other hand those who would follow the profession of engineering are afforded an opportunity of acquainting themselves with those mathematical laws and processes which are the only safe reliance in the prosecution of their chosen avocation. The greatest need of the department at the present is:

1. A collection of models illustrating the different styles of structures, as of bridges, arches, &c.

2. Of a full collection of the various instruments used by engineers so that the pupils may be made practically acquainted with their constructions, adjustments, and use.

3. A set of drawings of some of the most important public works, exhibiting the manner of their structure, their strong and their weak points, and showing how the latter are guarded.

4. A set of models for the study of the higher mathemetics.

5. A set of astronomical instruments which shall enable the student to determine latitude and longitude and to pursue to advantage the study of astronomy—a study of prime importance whether we regard its influence upon the mind or heart.

NATURAL SCIENCE.

BY PROF. C. A. WHITE.

Rev. George Thacher, President of the Iowa State University:

DEAR SIR:—In accordance with your request, I herewith present you with a brief statement of the condition of the cabinet and of the wants of my department in the University.

The branches pertaining to this department are, by act of the former Board of Trustees, Geology, Zoology, and Botany; but at present Physiology and Hygiene are also taught in connection with them, it being the aim of the professor in charge to constitute them a connected series of studies, each having a natural connection with dependence on the others.

While text-books are used in connection with all these branches, a large part of the instruction in all of them is given by the professor in the form of lectures, descriptions, and demonstrations based upon such specimens and other means of illustration as it has hitherto been practicable to obtain. The courses of text-book instruction in both Geology and Zoology are respectively followed by a full course of such lectures alone. In every course of instruction given in this department the free use of specimens, models, and diagrams is indispensable, because correct knowledge of these subjects can only be obtained by actual comparison of the objects referred to. No person attempts to teach Botany in any other manner, and yet the use of plants is no more necessary in the study of Botany than is the use of at least prepared specimens of animals in the study of Zoology.

This method of object-teaching is now adopted in the Zoology classes of the best schools of the country, each student being furnished with specimens in hand for study and comparison, while his recitations consist largely in reports to his teacher of the results of his observations upon the specimens assigned him for study. A moderate annual expenditure would enable me to introduce this method into my classes which is now impossible for want of suitable collections.

From the very nature of the case it will be seen that the means of illustration in Human Physiology must be largely artificial. Fortunately, most wonderfully perfect preparations of this kind may be obtained at moderate cost.

Characteristic fossils from every known formation in the geological scale are absolutely necessary to give the student a correct idea of geological history; and lithological specimens are just as necessary to convey a correct knowledge of the various formations of the State or region in which he lives.

The geological collections belonging to the University are the most extensive ever made from the State of Iowa, but they embrace very

little from formations in other States, and nothing at all from foreign countries. It should not be inferred from this statement that the collections from Iowa, especially those made by the State Geological Survey, are not really invaluable, but yet they are very far from sufficient to illustrate the general subject of Geology, and are not even complete as regards the geology of Iowa. These collections are especially valuable as authentically illustrating the published reports upon the Geological Survey of Iowa so far as that work has progressed, besides which they embrace much that will attract special students in Palæontology from abroad to the University for purposes of navigation.

The collections in Zoology have been made wholly by myself, and within the past two years, in addition to other too pressing duties. They are quite important, but have been procured at an expenditure of less than two hundred dollars. A few specimens have been procured from the Museum of Comparative Zoology, at Cambridge, Mass., in exchange for geological specimens.

The collection of an herbarium has been commenced, but since fresh plants are always accessible while the Botany classes are in progress, that work has been deferred for want of time and assistance.

A considerable number of very valuable model charts and diagrams have been prepared for illustrating the more difficult and important parts of Geology, Zoology, and Botany. Some of these are substantial, and as good as need be desired, but others are only temporary devices for want of means to procure skilled labor in their construction. Far the greater part of all the means of illustration used before my classes is my own individual property, and worth double that belonging to the University, for teaching purposes. This I have been obliged to keep in constant use with my classes, by which means its value is being greatly diminished by unavoidable injury and wear. To supply other deficiencies, I have from time to time borrowed specimens, to use as illustrations, from the private collections of citizens. Mr. M. W. Davis, of Iowa City, has been especially obliging in this respect, and the Faculty of the Medical Department have kindly loaned me means of illustrating Human Physiology.

Although the geological cabinet contains the very valuable collections of ths State Geological Survey, the survey is far from completion, and the collections are correspondingly incomplete; thus they do not fully illustrate the geology of the State. Some of the more important formations are scarcely represented at all, yet they afford so much of value that Eastern colleges keep local collectors employed to supply their cabinets while ours remain destitute of those very specimens necessary to illustrate our own geology. The cabinet needs not only the means of fully illustrating the geology of our own State, but no time should be lost in securing by purchase as complete a collection as possible from our own and foreign countries to illustrate, at least in a general way, the whole series of geological formations.

The zoological portion of the cabinet is small. Our own State, and even our own vicinity, would furnish much of value if means were provided for collecting and preserving the specimens. This is especially true respecting birds and mammals, but the greater part of a full cabinet must come from abroad. Since the geological formations of our own State, and of the vast region round about it, teem with the remains of marine life of the ancient seas, it is doubly important that the cabinet should contain profuse and varied collections from the existing seas. So important are such collections for purposes of comparison that neither Geology nor Zoology can be properly taught without them.

Many of our indigenous animals have already passed beyond the borders of our State, never to return, and others are fast following them. Unless something is soon done to secure specimens of these for the cabinet, our students must go to the institutions of other States, or to foreign countries to gain a knowledge of our aboriginal fauna,

It is very important that suitable models and diagrams for illustrating Human Physiology, should be purchased at once. This study is obligatory upon every student, and such means of Illustration are necessary to its successful prosecution.

The wants thus far enumerated are especially those of the undergraduate courses of instructiou. In addition to this, provision ought to be made before it is too late, for bringing together such complete

collections pertaining to all the branches of this department as shall form a basis for post-graduate studies. Our graduates and special students must now go elsewhere, if they wish to continue these studies with profit. Besides all this, it is our evident duty as conservators of the advanced educational interests of our State, to cause to be placed in the University cabinet, the most complete representation possible of its Geology, Zoology, and Botany. Every formation of the State should be fully illustrated; every species of animal that is, or ever has been, indigenous, should be represented; every species of indigenous plants should have a place in its herbarium, and living specimens of at least all its trees and shrubs, should be caused to grow upon its campus.

In compliance with your request, I add a few remarks intended to illustrate the *practical use* of the study of Geology, Zoology, and Botany, and the practical value of the specimens, models, &c., required to illustrate those studies. Passing over the false and flippant claims of some who assert that the study of such branches has little or no value as means of mental discipline and culture, and looking at the subject from a naturalist's stand-point, it is difficult to indicate a single fact which a student acquires in such studies that may not be of any practical value to him in after life; and it is quite as difficult to select judiciously so few illustrations only as it is here practicable to mention.

A careful study of the geology of our State has shown, for example, that coal occurs only in one set of formations, and that these formations are confined to a certain part of the State, and that it is therefore useless to spend money in searching for it elsewhere. Since these facts were known and published, there has been more money wasted in fruitless search for coal in the coalless districts than it costs to ascertain those facts. The facts could not have been ascertained without geological knowledge, and that knowledge could not have been acquired without geological specimens, neither can it be successfully imparted to others without them. Persons, without at least an outline of such knowledge, have no reason for accepting the statements of geologists except such as arises from a blind faith. They are thus liable to place that faith in unworthy persons, and to continue to expend money and labor uselessly—a good example of utilitarianism at fault.

Zoology embraces the study of everything which possesses animal life.

A few years ago the only oysters obtained along our sea-coast were such as were naturally distributed, and were only sufficient in quantity to supply the inhabitants of those neighborhoods. *Practical* men taking advantage of a knowledge of the method of increase and habits of these mollusks which naturalists alone had given, are now farming the sea with more certainty, than the land is farmed, and the result is a constant supply of fresh oysters all over the country.

When the country was first settled, the streams, especially those flowing into the Atlantic, were stocked with excellent fish. Through ignorance of their habits, the fish were destroyed, and none others of the same or other kinds took their place. Naturalists taught *practical* men how to restock the rivers, so that the migratory fish would again make their annual visits, and to cultivate the ponds and brooks so that these are now often more valuable than the lands that contain them.

In these latter years, every farmer knows the value of the study of insects, but it is just as impossible to teach entomology without a collection of insects, as it would be to teach descriptive astronomy to one born blind.

It has been common to stigmatize the study of birds and flowers as light, sentimental, and *impractical*; and the same persons would wage relentless war upon the birds that were protecting their growing crops from the ravages of insects, and saving him from famine. No discrimination was made between the guilty and innocent, because they possessed no knowledge of their habits. It is clearly impossible to teach a student even the difference in kind of birds without at least stuffed specimens.

The same remarks apply equally well to other animals.

It was a part of my original plan to have prepared skeletons and duplicate bones of all animals, wild and domestic, for the purpose of illustrating their structure comparatively. Knowledge acquired from a study of these, would be of great practical value to those who should have the veterinary care of domestic or other animals. Again, persons have been placed upon trial for their lives, the value of the

testimony for or against the prisoner resting on the correct identification of certain bones. Should such a case occur in the vicinity of the University, or even in the State, the person most likely to be called as a witness, is the teacher of comparative anatomy in the University. Without a full collection of such specimens, he could not testify with confidence, or at least could not support his opinion by a comparison of specimens like or unlike those in dispute. Such a result would bring discredit upon both teacher and institution.

The climate and physical features of our State are so nearly uniform, that every species of shrub and tree within its limits may doubtless be made to grow upon the University campus. Ocular demonstration of such a fact, would be of practical value to any student who might afterward engage in the cultivation of trees, a business which is very important one in Iowa, and will be so for many years to come.

MODERN LANGUAGE.

BY PROF. C. A. EGGERT.

The study of Modern Language in European and American Colleges is of comparatively recent introduction.

For a long time it was thought unnecessary that any but the language of Ancient Greece and Rome should be studied by those who aspire to a higher education. This was natural. When the want of such education became for the first time generally felt, hardly any one of the modern tongues was so far developed as to be worthy a place in a course of higher education. The Reformation gave an additional stimulus to the study of Hebrew and Greek, while Latin was studied as a matter of course, being the common medium of learned conversation and of instruction.

The study of these ancient languages had the very desirable effect of making the nations of modern Europe aware of the high civilization of the extinct races by whom these languages were spoken, and of opening to the intelligent student, a realm of wisdom and beauty,

such as his own or any contemporary language and literature was then very far from presenting.

Gradually, however, modern speech acquired polish and refinement, and modern authors attempted, more or less successfully, first to imitate, then to rival ancient authors.

Modern discoveries and inventions made necessary the use of new words and phrases. Ideas that never entered the head of Greek or Roman philosopher had to be expressed in modern speech. New styles of art made their appearance and new productions in almost every field of human thought, feeling, and enterprise gave proof of the vigor and originality of the modern mind.

The Greek temple had been the highest architectural triumph of Greek art, but the Gothic cathedral, representing a different ideal in art, proclaimed no less proudly the triumph of modern art.

An Ionian poet of magnficient poetic power, had given to the world the greatest Pagan epic, and four Attic poets produced those masterpieces of the Grecian stage which will for all time be ranked among the most perfect specimens of dramatic art. But Dante arose, and gave his countrymen, in the then despised language of the common Italian people, a christian epic of such power and beauty as to earn the dignity of being ranked with the very first production of the world's greatest poets.

In Spain, *Cervantes* produced a work of unsurpassed genius. In England, the great *Shakspere* cast the inspirations of his wonderful mind into the enduring form of English speech, making of the latter a "classical" language for all time to come. In France, *Corneille* and *Racine*, *Moliere* and *La Fontaine*, brilliantly displayed the capacities of their native language, and at last Germany, so long the battle-field of Europe, having had her language fixed in forms of original beauty by the great reformer, *Martin Luther*, gave to the world the glorious series of productions of unsurpassed excellence from the pens of the great representative poets of these modern times, *Goethe* and *Schiller*, and of that splendid galaxy of other writers, in every field of human art and science, by whose combined labors German literature has gained its present proud and exceptional position.

With the growth and development of these and other languages,

prominent among them also those of Scandinavia and Holland, the necessity of studying them was gradually felt more or less by all scholars. Latin was no longer the medium of conversation, except for the catholic clergy, and the absolute necessity of studying it was no longer felt by those who, while desiring to carry on their studies as far as possible did yet not wish to become professional antiquarians, philologists, or theologians.

Accordingly, we find that schools were organized designed to meet the wants of such persons, while the college proper continued to give the greater part of its time and attention to two of the ancient languages.

By and by, however, even the colleges, in some measure, acknowledged the justice of the claim of modern languages, by paying greater attention to the vernacular, and by giving at least one other modern tongue a regular place in the curriculum. In Germany French was, and still is, regularly taught in the classical college. In France, German was, at least, not entirely neglected by the higher institutions, and at the school of higher studies in Paris, a knowledge of German was even made an absolute condition for entering the Department of Comparative Philology. Even in England some attempts in this direction were made, although English conservatism, strengthened by the fashionable custom of quoting Horace in Parliament, and sneering at the "affairs of the continent," made it very difficult for either French or German to gain a foothold in British institutions of learning. Even to-day some very prominent Englishmen, among them the known liberal, John Stuart Mill, refuse to modern language a place in the regular college curriculum, although at the same time admitting their importance.

In our own country, where the power of tradition is less strong than in Europe, the subject of modern languages has been treated with far more liberality and good sense. There is hardly a first, or even second-rate college in the land, at which these languages do not receive more or less attention. In a democratic country like ours, colleges cannot afford to exclude those who care more for the civilization of the present than they do for the civilization of the past.

It is clear that if the regular college should refuse to give attention to the modern languages, separate institutions would have to be

established—as in France and Germany—to meet the requirements of that peculiarly modern culture, which finds its expression in the modern tongues. There is, however, no real need for such separate schools, and in most of our leading American institutions, the practice has obtained general approval, of allowing students a certain latitude of choice in the matter of languages. In the Iowa State University one year of German is obligatory on all students who wish to enter the Freshman class. Beginning with the Freshman class, they may select between Greek and German, and in the two last years of the course, their choice between the various languages taught, is not limited at all. In this way the opportunity is afforded, that all students may give some attention to both the ancient and modern tongues, or that they may give special attention to either, only Latin being a strictly required study for more than one year. French may be begun in the Sophomore year by students who aspire to the degree of B. Ph. which at this institution is of equal value with that B. A., and Italian is studied during the Senior year, while French and German, the same as Latin and Greek, are continued during the Junior and Senior years, and when required, beyond these years.

This arrangement combines the advantages of the old college with those of the new college, as the latter exists in the German "Real Schule" or French "Lycee." Similar arrangements exist at all other American State Universities and at many denominational colleges.

In order that the instruction in modern languages may bear its best fruit, it is indispensable that it should be given by really competent teachers. It is a very gratifying fact that our foremost universities and colleges fully appreciate this truth. America's foremost philologist has for over twenty years been teaching German at Yale College.

The names of some of our most gifted authors—*Ticknor*, *Longfellow*, *Lowell*—have become identified with the cause of modern languages at Harvard University

Other institutions have followed the examples of these two leading American universities, prominent among them the State University of Michigan, Princeton College, and many others. It is to be hoped that the efforts of those who are directly or indirectly interested in the cause of modern languages at these various institutions, will, in

course of time, produce a more intelligent appreciation of the value of this branch of study than at present exists among the educated, and more particularly of the educators of our people.

It is unfortunately only too true, that the crude views, concerning the modern languages, entertained by men like J. S. Mill of England, Richard Grant White of this country, and of many others who fancy that their proficiency in one department makes them fit judges in every other department, have done and are doing much to prejudice many honest and intelligent people against the modern languages as a necessary and indispensable branch of all true highe education.

It is not, and cannot, from the want of space, be my object to enter into any special comparison of languages, but I think it will not be out of place here to emphasize the claims of the leading modern languages as valuable means of discipline, and to point out the injustice of the charge made by so many would-be scholars, that they are inferior in this respect to the ancient languages.

In as much as the silliest arguments, or what many consider to be arguments, are persistently urged against the modern languages, as in any sense entitled to take rank as studies fit to give discipline to the mind by the side of the ancient, it may be well to quote here the testimony of a gentleman whose thorough knowledge of both the leading ancient and modern classical languages, not disputed by his adversaries, gives him a peculiar right to be heard in this matter. Dr. Arthur Kortegarn, of Bonn, Germany, recently addressed a meeting of collegiate teachers of Western Prussia on the subject of "The better method for the training teachers of modern language." In this address several remarks occur which are so full of good sense and so well supported by facts, that I will take the liberty of quoting them, believing that the gentleman's views are not those of a blind partizan, but those of an enlightened, thoroughly informed and high-toned christian scholar.

The speaker answered first, the following two favorite arguments of the advocates of the traditional college training (by means of Latin and Greek to the exclusion of modern languages) viz: First, that French, English, &c., can only be regarded in the light of ultilitarian studies, intended to enable those who study them to earn

money, and that hence, their acquisition was not calculated to train and discipline the higher faculties, and secondly, that a student could easily learn French and English, or any other modern language, after having mastered Greek and Latin. He said: "It seems to me that these views originate mostly in real ignorance, or are due to a wrong conception of the mission, and a complete lack of appreciation of the value of modern languages for the objects of culture. I do not doubt that an eminent historian or physicist may possibly get at the general meaning of a treatise in French on a subject pertaining to his speciality, without having paid much attention to the study of French, but I deny *that such a person is imbued with the elements of culture which exist in the French language*, any more than that the intellectual eminence of such an individual can be said fairly to represent the intellectual capacities of the majority of educated persons.

The case is likewise not rare that young scholars, who have for a number of years trained their intellectual powers by the study of Greek and Latin, acquire, in their hours of leisure, an elementary knowledge of the French and English languages, and thus are led to the false conclusion, that it is easy to acquire the knowledge of these languages, especially after a preliminary study of Greek and Latin. But in answer to this it must be said, in the first place, that in such a case the student did not make the attempt to study the foreign language in a scientific spirit, to become intimately imbued with its character, to grow intellectually and naturally into the organism and genius of that language, and to penetrate into the intellectual life and culture of a foreign people, *but that his whole work amounted to mere bungling efforts, the results of which produce no other effect on the better instructed hearer than that which is produced by intolerably bad and false singing, or the frightful practice of a beginner on a stringed instrument.* On the other hand there are now known several cases of young men, who, after completing the course in a not classical college (Real Schule) *learned in a single year all the Greek*, the *acquisition* of *which require four years* in the *regular classical college* (the gymnasium.)

"The logical construction of the period which in the French language (no less than the German) is accessible to, and attainable by

only a delicately trained mind, the wealth of the syntactic forms of this language, the rich and weighty intellectual stores of the writers of a great civilized nation of our time, do not only endow the pupil by means of a powerful mental discipline, with the ability of working with energy, perseverance, and elasticity, but also in so far develop his aesthetic and musical susceptibilites, as they enable him to feel the charm of the accent, the melody and modulation of the foreign tongue.

"The modern languages should not be studied in our schools for the attainment of merely practical ideas. At school no language should be learned for the sake of the language, but in order to become acquainted, by means of the language, with the intellectual, moral, and religious development of the foreign people."

"The ancient languages are not taught in the classical school for the purpose that the student may afterwards be able to understand a Latin or Greek author, but on account of the mental discipline, the intellectual life which flows from them into the learner, just as it is with modern languages. They are studied that we may the better understand the intellectual culture of our age, and in order to draw mental discipline and mental vigor from the religious, political and ethical life of the great civilized nations of our century.

Some 30 or 40 years ago, that *elementary facility* in the use of a foreign language, which the opponents of the modern language generally *confound with the knowledge itself* of these languages, used to constitute, it is true, almost exclusively the aim of the students of these languages.

To-day, the study of the modern languages requires not only the same quantity and quality of mental exertion as that of the ancient, but something more. It is a great mistake to believe that the study of a modern language is an easy matter."

"The intellectual life of modern civilized races is in the same degree superior to that of the Greeks and Romans, as the christian religion and our modern political growth and development are superior to those of all pagan and other ancient nations."

"This life fluctuates, however, and can be understood only with difficulty. Hence, the necessity of careful instruction to guard

against the dross which is found by the side of the most precious pearls."

"In studying the modern languages, it is just as necessary, as in studying the ancient, to quicken into activity the various mental forces—reason, imagination, sensation, and will. They also contain germs of Geography, History, Poetry, Philosophy, Religious, and Moral systems; nor can the teacher and student omit considering Grammar, Syntax, Style, Prosody, Rhetoric, etc. The formation of sentences and periods in a modern language is by no means dependent on the subjective feeling or pleasure of some philological school, but in strict accordance with logical and grammatical laws. As regards the use of synonyms, the nicest discriminations and shades of meaning have to be observed; neither can the student of a modern tongue safely omit to study the domestic institutions, the customs and manners, the various fields of Art, Science, and Industry, of Political Economy, etc., of the country, the language of which he is engaged in studying."

In the remaining portion of the discourse, the speaker discussed the various means and agencies for the training of teachers of the modern languages. He regards it as an absolute necessity that at the German universities eminent English and French scholars should be appointed as professors of their respective languages and literatures, and that the candidates for positions in Preparatory or Middle Schools should by all means be sent for a year or so to the country of the language of which they intend to become teachers.

It is an interesting fact that this country is really ahead of Europe in the attention given to modern languages at the college and university. And this is as it should be, although much remains yet to be done. It seems strange that until quite recently the study of English was entirely unknown in the German colleges and universities, but it should not be forgotten that the general recognition of the importance of the study of German at our principal institutions is also of quite a recent date. There is at present a movement on foot in Germany, to introduce the study of English in the college, on the ground that the English, being of the same family as modern German, has greater claims than any other on the attention of German students. For precisely the same reason, it seems to us, German

should be the first language, or among the first, studied by the English or American student.

A learned and accomplished American scholar, Dr. Dwight, expressed his opinion of the value of German in the following words:

"There is no modern tongue which a mind thoroughly English in its type and tone can so profitably receive into all its elements of thought and growth as the *German*. It has great capacity for expressing nice discriminations and poetical conceptions; and to us of other nations, whose languages are the mere alluvial deposits of those of older days, having none of the interior principles of spontaneous organic growth, that the German like the Greek possesses, taking on new forms and new combinations as used by each new age and even by each new mind that assumes to itself the privilege of making them, as the right is universally conceded: it seems delightful indeed to come within the atmosphere and aroma of its fresh blossoming life." * * * "The heart is stirred by the splendor of its poetry, as it sometimes is under the power of some wild witching melody, which makes the soul feel as if deep within itself there were another self, to which few things in this world had the power to make themselves heard or seen."

And further, on the relation of English to German:

"The grammatical constitution of the English language is Teutonic. In every part of the language its inward chemical and vital energies are all Teutonic. A very small proportion of its vocabulary is Celtic, and of the Latin it absorbed less than any of the other provinces of Rome, though so much, so that its lexical elements are chiefly Anglo-Saxon."

To the foregoing remark only one objection can possibly be raised, that it produces the impression as though English had absorbed its Latin elements when England was a Roman province, or because it once was a Roman province, and that it received them in the same manner as the other provinces of Rome. This would be an inaccurate conception of the true fact, and as the latter is of great importance, if we wish to understand why, next to the German, the French language naturally deserves the greatest attention on the part of the English or American student, I will here briefly refer to what is

well known, theoretically, by all scholars, but practically appreciated by only a few.

The purely Germanic tongue of the Anglo Saxon was powerfully modified by the language of the Norman-French who were, likewise, of Germanic descent, but had adopted the common language, "lingua rustic" of northern France. This language arose from a corruption of the bad Latin which the military and hierarchial Latin conquerors of Gaul had introduced, by the German invaders, who, in their turn, had conquered Gaul, and to whom France owes its present name.

At the time William of Normandy conquered the Anglo Saxon realm, Norman French was already a language of considerable force, wealth, and flexibility. It was no longer Latin, for the same reason that the English of to-day is no longer Anglo-Saxon, or German; or that the Latin of Cicero was no longer the original language of the Latins, Volscians, Umbrians, Etrusci, &c. The French of to-day is in great measure the direct descendant of the language spoken in northern France, so that modern French resembles Norman French closely enough to offer a great portion of the advantages likely to arise from a study of the former for the purpose of gaining a critical insight into the *genetic* process of the English language.

Now, while I could by no means assert that an acquaintance with German and French, either ancient or modern, is necessary for the acquisition of a perfect command of the English language, for I believe that the time required for the study of foreign languages would, if applied to the sole study of English, secure this object far more rapidly and certainly,—I yet cannot doubt that for a *critical* study of English, a knowledge not only of Norman-French and Anglo-Saxon, but of modern French and modern German is indispensable. Language is both an *art* and a *science*. In so far as it is an art, proficiency in any language will be in the direct ratio of the attention given to it irrespective of other languages. In so far, however, as language is the subject of a *science*, it is not sufficient that we merely know the outside and mechanical structure of particular languages, but also the mental affinities and historical and other relations which they sustain toward each other. It is one of the most encouraging signs of the gradual spread of sound views on education,

that in all the civilized communities of the modern world, it is now held as a matter of course, that the study of the vernacular should receive particular attention at the national schools. No sane man or woman any longer believes in the mediæval doctrine that the most direct way to learn English grammar is by committing to memory the multifarious rules of Latin Grammar.

It is now generally recognized that modern languages are the products of modern conditions, and that the relics of older languages still found in them can be considered only in the light of the material which the modern mind used for the rearing of structures that are just as peculiarly its own, as the edifices of the modern architect are peculiarly his own, although he may have used in their construction the fragments of the most beautiful ancient temple.

Whatever the importance of those fragments of ancient times for a scientific study of language in general—and I think that importance can hardly be over estimated—it must yet be true that the rational way of a scientific study of any given modern language is by beginning to study those cognate languages which contain, in a wider or narrower sense, the elements of which it is more directly composed.

This is evidently also the opinion of Prof. W. D. Whitney, of Yale, when he claims for the study of German, "that the fundamental relations of German to the most central and intimate part of English makes the study instinct with practical bearing on our own tongue, and equivalent to a historical and comparative study of English itself." But what is so pre-eminently true of German is, in a lesser degree, true of French also.

It is not true that a knowledge of Latin is sufficient to enable the student to analyze those words in the English language which are not of Teutonic or Celtic origin. The numerous words from the Greek or Latin which the English as well as the German and French dictionaries contain are, for the most part, the common property of all these languages. They are generally *technical* and not used in any other but technical literature; words like Telegraphy, Astronomy, Photography, Oolite, Ontology, &c., are neither English, nor German or French. They are part of a cosmopolitan vocabulary understood by those who are acquainted with the things

for which they stand, and by none else. They are not the words generally met in the works of the great writers, neither in *Shakespere* nor *Tennyson*, neither in *Macaulay* nor *Bancroft*.

The words we generally *do* find in the highest literary efforts of English and American literature are for the most part of Anglo-Saxon, i. e., Germanic, or of Norman, i. e., *French* origin.

This is perhaps most apparent in the Bible, and in Shakspere's works.

In the Lord's Prayer there are, for instance, four or five words not of Teutonic origin, but almost every one of these is directly derived from the French, *i. e.* had already obtained a new individuality which was quite distinct from the Latin before it was taken into the body of English speech. Thus trespass from trépas, temptation from tentation, deliver from delivrer, power from pouvoir, glory from gloire. (Name and day existed as Anglo-Saxon words, although they are originally Latin.)

Words like *desire*, *dinner*, *beauty*, *hour*, *journey*, *joy*, *rejoice*, *view*, *etc.*, were none of them directly derived from the Latin. The origin of these words, and most others (not Teutonic) that are in common use, we cannot understand without going back to the corresponding French forms. Who would suppose, if ignorant of French, that *journey* meant primarily the *day* as distinguished from *jour*, which may include the *night*, and was used to express the achievement, the work of a day? Knowing this, it is not difficult to trace the word back to the Latin "diurnus," but without the French word it would tax the ingenuity of the best trained mind to account for the derivation of the English word. Shakspere uses the word "attend" in the sense of "await." Why? Because "to attend" comes from the French "*attendre*," which means "to expect" or "await."

As regards the German the case is, of course, far stronger.

The student of German, when he becomes acquainted with such words as *knecht*, *macht*, *recht*, *knabe*, *licht*, *fecht*, *brachte*, is not only reminded of the, more or less, corresponding English words knight, might, right, knave, light, fight, brought, but he also finds at once an explanation for the existence of the silent letters in the English words. He gets some idea of "Comparative Philology"

when he observes the frequent correspondence between the s or z sound in High German, when final, and "t" or "th" of the Low German, respectively the Anglo-Saxon and English. Words like *das*, *lass*, *watser*, *wasser*, *hass*, *salz*, *malz*, *zu*, *katze*, readily remind him of let, that, water, hate, salt, malt, to, cat. The meaning of words like *vater*, *mutter*, *bruder*, *schwester*, *treu*, *gut*, *land*, *hand*, *fisch*, *feder*, *gold*, *silber*, and many others, he recognizes as easily as though they were English words. Of the defective English verbs: I can, I will, I shall, I may, I must, &c., he discovers with interest the missing forms in the German, which has retained them.

In spite of all its foreign admixture, English is yet a purely Teutonic language as far as its grammar is concerned. Hence a scientific treatise on English grammar necessarily includes constant references to those Germanic dialects from which modern English and modern German sprung. In fact the science of English grammar treats the English and the German languages as phases in the history of a single massive stem from which these languages, like so many powerful branches, have grown forth. For this reason, that greatest of philologists, Jacob Grimm, in his famous "German Grammar," treats as exhaustively of the Anglo-Saxon language, the mother of the English, as he does of the Gothic, the mother of the German, regarding both, in fact, as only slightly varying forms of the same essential tongue.

Whoever has given any attention to the facts here only briefly alluded to, will readily understand why it is that of all the various modern languages, the French and German are selected as being peculiarly adapted to the use of American (or English) schools. There is a fitness in this selection which none but a superficial person can deny.

But it is not only on the grounds just presented that we base our claims for a prominent position of these languages among the studies pursued at an institution of learning.

The languages of England and America, of Germany and France, undoubtedly present to-day the most valuable portion of modern christian civilization.

Modern history virtually begins with the great movements of

German races, which resulted in the present composition of European nations. "The British constitution," says Montesquieu, "was born in the forests of Germany." The history of the growth of republicanism must begin with the history of Germany. The Latin races have never yet succeeded in establishing or preserving a true republic. Republican freedom means intelligent subordination to the rule of self-made laws. It means the use of reason in the force of authority, and the power of peaceful association for the attainment of common ends. It is to the infusion of pure Germanic spirit into the body of the Celtic and Latin races of Europe, that France and Italy owe their modern existence. It was this same spirit that raised England to her proud position, and prepared the crowning glory of political life—the constitution of the United States.

These are not mere phrases or gratuitous operations, but statements of facts which can be very easily verified.

Says Mr. Dwight:

"Modern civilization is the combined result of the ideas, institutions, and influences, contained in four great providential manifestations of national life and character: the Jewish, Greek, Roman, and German; in which category, although the German be last, it is far from least. It is impossible to comprehend *either the history of the past or the philosophy of the present*, without a full acquaintance with German history, which, strange to say, has been more neglected hitherto in this country than any other history. But the marks of German mind and might lie deep and strong over all the languages of southern as well as of northern Europe."

It is a demand of our times, a demand so strong that only willful ignorance is powerful enough to resist it, to extend our intellectual horizon beyond the narrow sphere in which birth has placed us. Every intelligent being feels that to know conditions, ideas, views, and opinions other than those of one's immediate surrounding, is an absolute necessity, if we wish to advance intellectually, to free our minds from the shackles of prejudice, and to expand our sympathies. We call him liberally educated who has the ability of readily identifying himself with the individuality of others, of appreciating foreign conditions, and judging intelligently of both near and distant events. To give this kind of a liberal education is the

highest aim of the college or university, but it may well be asked, whether it is possible to reach this aim without the study of modern languages. Language is the most delicate as well as most powerful instrument of the human mind. There is no element of culture so valuable, no means of progress so potent, no product of human genius so admirable as language. And modern culture is represented by modern languages. What can be more natural than the demand that these languages should be studied by those who aspire to be the leaders and educators of the present and future generations? Is there a more efficient way to impress the youthful mind with a generous appreciation of that which is good and great in foreign nations? Is there a better way to make him aware, by comparison, of the great and good which his own nation, language, and literature contain? Is there a safer road to that great end of all true education, to make us love our neighbor, because we *understand* his motives and *sympathize* with his efforts? An ancient philosopher claimed to have three souls because he knew three languages. We believe that by deeply entering into the language of a great civilized nation the mind and soul cannot help growing, and gaining in vigor, depth, and efficiency. This is the reason why the study of the ancient languages has been so long the most valuable means of education. With altered conditions, social and political, a most wonderful development of modern life, culture, and literature, it may well be admitted that what has been so well done by the ancient languages in the past, may now be done, in part at least, by the study of the most important of modern languages.

There is, in fact, no valid reason for the study of Latin or Greek that is not just as applicable in the case of the study of English, French and German. These languages differ from each other and from the Greek and Latin, and in a merely philological point of view the Greek, particular, has greater claims to be regarded as a perfect language than any other. But it must be borne in mind that the essential characteristics of language are found in the English as well as in the Greek. The wealth of formal elements in the ancient languages is certainly not equaled by the same elements in French, and still less in English. But these languages are nevertheless not so different from either the Greek or Latin as not to offer the means of

a discipline that is the same in *kind*. That distinguished philologist, Prof. Max Mueller, expressly states that as regards roots, declensions, conjugations, the formation and analysis of words, etc.," the modern languages occupy the same ground as the ancient." And again:

"The only difference between our cases and those of the ancient languages consists in this—that the determining element is now placed *before* the word, whereas, in the original language of the Aryans, (and also Greek and Latin) it was placed at the end." It should not be forgotten that all those multifarious endings of the Greek and Latin languages were originally just as distinct words as our pronouns and prepositions which, in the conjugations and declensions of most modern languages, take the place of the inflections in Latin and Greek. The metaphysical claim that the disciplinary value of a language must be measured by the number of its inflectional forms has therefore no real basis in sound reasoning.

These forms are no doubt both interesting and beautiful features of a language, but they do no more determine its value as an instrument of the mind as do the ornaments on any other instrument or machine determine the value of that machine. A modern language cannot be expected to be precisely like an ancient language, any more than a modern tool can be expected to be precisely like an ancient tool of the same kind. The difference in the degree and kind of civilization must naturally appear in the languages no less than in other matters. A modern steamer is possibly a less poetic subject than an ancient tri-reme, but it would be absurd to make poetic or other accessories a test of excellence. The question is, "Does the tool, the ship, the instrument of thought or action perform the work for which it was fashioned?" If this question is a proper one, it is easy to prove that modern languages are admirable instruments of the mind that seeks expression in language, and that there is no thought so high or so low, no shade of meaning so delicate or so obscure, no feeling so sublime or so contemptible, that, if it can be expressed by language at all, cannot be expressed in a modern classical language.

If this is true, we can readily conceive that modern classical languages cannot be as inferior a superficial comparison with the ancient classical languages may make them appear. *Difference* there

may be, nay, there *must* be, but this difference does not necessarily imply inferiority. The inference is natural that the best instruments of thought of the modern mind must possess in their structure admirable substitutes for numerous forms of thought of the ancient mind, and this being recognized as true, the whole question about relative superiority or inferiority, appears too puerile to deserve any further attention.

If we carefully compare the syntax of the French language with that of the Latin, we are struck with the almost complete identity of the French and Latin rules in all essential features, in spite of the difference of the means used by either. The rules of agreement (of adjective and past participle) are almost exactly the same in French as in Latin. The rules concerning the objective accusation after *aider*, *imiter*, &c., and the accusation of plan and time are the same for both languages. These is *a* great resemblance between the *casus absolute* in Latin, with a similar form in French. The Latin genitive although expressed in French by a preposition, yet closely resembles in its use the corresponding form in French, even in those particular cases where the genitive follows verbs like *piget*, *pudet*, &c. The French tense forms correspond almost in every respect to the Latin forms, and the use of different modes is nearly identical in the two languages. If from these facts (and many others which it is not necessary here to state) the inference is drawn, that a knowledge of Latin must be of great advantage for the acquisition of French, it should at the same time be remembered that there can be no reason why a knowledge of French should not also be of great advantage for the acquisition of Latin. At any rate it must be plain that the results of the study of either language in so far as these results are looked for in the effect of the study on the mind, must be of nearly or quite the same disciplinary value in either case.

If we find that the French language uses the definite article almost exactly as the ancient Greek does, we must admit that as far as this use is concerned, the French cannot have any higher, or greater disciplinary effect on the student's mind, than the French. When we find that the German declensions, in some respects, almost run parallel with the Greek declensions, we cannot help admitting that the discipline in either language must be somewhat akin, in so

so far at least as the declensions are concerned. If we find that the French conjugations are so difficult that it takes fully as long to commit them to memory, as it does to commit the Latin conjugation, we fail to see the inferiority of the French, as far as the conjugations are concerned. The alleged fact that there are more difficulties to be overcome in the study of an ancient language, than in the study of a modern, would be of importance, if *all* these difficulties really *were* overcome. If they are not, then the discipline of modern languages, *as far as it goes*, will be exactly *equal* to that of an *ancient* language as far as it goes, for the same reason that a good clock set to run 24 hours, will go, while in motion, just as fast as one set to go a week or a year. Now, nothing is more certain than that no collegiate course will enable any student to learn all about even the simplest language. Hence it matters not how long it may take to master a more difficult one, because there is no more time available for mastering the difficult one, than there is for the easy. But it is, I think, a great mistake to believe that the acquisition of a language like the French or English is easy, and as regards the German, we have the testimony of those who have tried the experiment, "that the German is more difficult than the Latin, and but little less so than the Greek."

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*The German language is the richest of all languages, and its capacity of "home-growth" may be inferred from a single example. From the word "ein"—one, the German language is formed, by means of prefixes and suffixes, such as *ver*, *un*, *heit*, *ig*, *keit*, *sam*, *eln*, some twenty-three distinct words, some of them expressing very nice shades of meaning. The formation of new words by compounding single words is another prolific source of new words. The remarkable activity of the German mind, so pre-eminently philosophical and scientific, has discovered a large number of conceptions of such delicate gradations and shades that the German words by which they are expressed sometimes defy all attempts of the translator to render them accurately. The distinctions between *vernunft* and *verstand*, higher reason and ordinary reason, respectively, the idea expressed by the word "*an-schauung*," and "*an-schauungs-unterricht*," inadequately rendered by object-teaching, are only a few of the most common cases in point.

In its syntactical and rhetorical forms, the German language is remarkable both for its regularity and the freedom of expression which exists within and by virtue of this regularity. In all this, and particularly also in its wealth of synonymes expressive of the nicest shades of meaning, (there are for instance at least seven different words for the idea of wood or forest, not counting the compounds, which, like "Hochwald," "Lustwald," express important distinctions), the German language possesses elements for the purpose of linguistic discipline that are not inferior to those possessed by any other language, ancient or modern.

There is, however, yet another point of view from which this subject may be profitably examined. Why should *difficulty* be a *desirable* property of any study? Is it not the express object of *education*, that is, of the art which prepares the way for the acquisition of knowledge as well as the formation of character, to make the access to the hills of science graded and easy? Is it not true that our most valuable knowledge, our best ideas and purposes, were obtained almost without any conscious effort? If education is not the art we have defined it to be, then what is it, and what is its possible use as an art? A writer on similar subject comments on the "huge fallacy" that study must be difficult in order to be profitable, in the following pointed manner:

"In the minds of many people," says Mr. D'Arcy Thompson in his "Day-dreams of a Schoolmaster," "education is inseparably connected with the idea of difficulty and tediousness. They imagine that a great deal must be accomplished when painful efforts are being made. They find a grim satisfaction in the feeling of obstruction. So, when you row a boat against a stream, you hear the water ruckling at the prow, and you feel virtue go out of you at every stroke of the oar, and the boat is almost stationary. But when you row with the current, you hear no noise of rippling; you scarcely feel your oar, and the boat is gliding like a swan."

The fallacy so pointedly alluded to in this passage is, nevertheless, accepted by many as a true dogma. This circumstance, in connection with the common belief that the acquisition of a modern language is incomparably easier than the acquisition of an ancient language, is the principal reason why many schoolmen refuse to modern languages the honor of being counted among the studies which chiefly contribute to the discipline of the mind. If it were otherwise we should not see in some of our most noted institutions such a ridiculously small portion of time devoted to the study of French and German. The Iowa State University, by allowing certain substitutions, enables every student, if he or she so choose, to devote from three to five years to the study of German, and at least two years, of five recitations per week, to the study of French. By this arrangement it is possible to do, comparatively, justice to these studies, and to give students such a thorough preparation as

will enable them to become efficient teachers of the one or other, or both of the principal modern languages here taught.

Our time is one of remarkable activity in every field of action. There never was a time when nations felt so much the need of intellectual efforts. It is no longer the phantom of military glory, or physical power, that allures the best minds of the foremost nations of Europe and America, but there is a noble rivalry between them all to excel in the works of the mind, to advance intellectually.

An eminent English or Scotch writer, in the Edinburgh Review, makes the following extraordinary admission, as regards his own country: If we look for the cause of a fact admitted and deplored by all Englishmen—that it is Germany, not England, which is now dictating the course of modern research and the development of modern ideas—we need not go far to find them. The Germans have been careful, while we have been careless, of selecting the best and most efficient methods for the education of the mind." No courage or discipline in the army could enable the spear or the arrow to contend with the musket or the cannon." We have been fighting the battle for intellectual supremacy with bad weapons; weapons as rude and obsolete as the arrow and the spear; weapons which our own posterity will perhaps some day regard with a sense of wonder as contemptuous as that which is now excited in ourselves by the contemplation of those clumsy and ungainly relics which extinguished Allophyllian races have left behind them, as the only traces of their existence, in our caves and fluvial deposits." * * * The greatest danger to English institutions and English society at the present time, appears to us to consist in the fact that the education of the upper classes is not such as to qualify them to maintain the position they owe to their superior wealth and station; and that whilst knowledge of every kind is more rapidly diffused among the people, those who ought to be its guides and leaders, are left to batter on the moor of classical antiquity and mediæval traditions." It may well behoove other nations than that of England, to examine closely their educational systems, and few, there is reason to believe, will be found able to claim total exemption from the charges here preferred. How much more attention is even now paid in many institutions to the leading minds of ancient culture, than to the representatives ofa culture far

more advanced than that of Greece? Certainly it would be a great mistake to neglect antiquity in any of the higher institutions of learning, but is it not even a greater mistake to neglect the modern phase of culture? And yet, how great is the prejudice in favor of the routine of college instruction even now. No one objects if the various departments of a university are amply supplied with illustrative material, apparatus, museums, works of art, etc., except in the case of the department of modern languages, if such there is. And yet, what reason can be alleged for denying to this department aids which are considered a matter of course in all others? Is modern art less worthy of attention than ancient art? Are illustrations of scenes of actions that occurred in the 19th century less suitable for school purposes than those representing scenes, etc., that occurred two thousand years ago? It is frequently asserted that the case of the modern languages is an exceptional one, inasmuch as it is possible to get familiar with them in the countries where they are spoken. The latter is true, and it is likewise true that it is possible to go and see the originals of many modern representations of cities, scenery of all kinds, individuals, etc. In all this, however, we fail to see any argument that would not apply with equal force to every other department, The sites of ancient cities, the museums of ancient art, of natural history, etc,, may be visited just as well, The best place to study mineralogy would be in a flourishing mining district, Latin may be rapidly learned in certain Catholic seminaries, where it is still a spoken language. The galleries of Europe are open to every one who wishes to study the original works from which we derive those representations which are so useful in classical instruction. And so with all other studies and aids to study—what is true of the one is no less true of the other, The reason why the various sciences and languages should be taught at our institutions is not that they cannot be taught elsewhere, but that it is practically impossible for the majority of students to visit those various places, districts, laboratories, museums, etc., where they might find instruction in the many distinct branches they desire to study.

There is still another reason why this should be so. The studies carried on at the college are intended not merely to store the mind, but more particularly to discipline by a regular system of training.

While we contend for improved methods of instruction, and claim that education of any kind should be treated as an art, the object of which it is to remove as far as possible all difficulties, and to facilitate in other respects, the acquisition of knowledge, we are yet very far from claiming, as some seem to do, that study may be made as easy as to be little more than play. On the contrary, we affirm that without the capacity of absorbing attention, of concentration on the subject before the mind, mental discipline—the highest object of all study—cannot be gained. This is as true of the study of modern language as of any other. Without such attention and concentration no one ever yet attained any deep insight into a foreign language. Mere parrot-like repetition of a set of phrases and some superficial reading should not be confounded with real knowledge. But, it must be observed, that a correct pronunciation is certainly an essential part of such knowledge, and that, without it, an essential element, the flavor, so to speak, is wanting. For it cannot be sufficiently emphasized that one of the principal reasons why modern languages should have a place in every course of learning, not strictly elementary, is found in the fact that they are the living vehicles of living thought, and, hence, afford the inestimable advantage that they are capable of being taught exactly as they are. No true classical scholar can help regretting the impossibility of teaching the Greek of Homer or Sophocles, the Latin of Virgil and Horace. Whoever has a tolerably delicate ear for the niceties of speech can appreciate how disagreeable an imperfect pronunciation of a known language is ; but as regards our pronunciation of Latin or Greek, it is confessedly so far from the true standard that no Greek or Roman would recognize his own words as we utter them.

What the ancient languages obviously cannot do, the modern languages assuredly should, the training of the ear to recognize the sound of a foreign tongue, is in itself one of the most valuable exercises. Modern pedagogy is mainly based on the principle that education must above all, aim at the proper training of the senses. In the study of a modern language, the sense of hearing is trained at least as much as that of sight, and there is hardly another study that can do as much for the former sense. There is besides, a great deal of satisfaction in being able to repeat the words of a great foreign author, in nearly

the same style and the same words in which they were originally uttered, or intended to be uttered. Language is essentially sound—letters, ink, types, books, &c., are at best only imperfect substitutes for the living speech, although some would-be educators seem to believe that the reverse is true. Without exaggeration, it may be said, that the efforts required to overcome the difficulties of using a foreign language in a proper manner, constitute one of the finest exercises of the mind. No one who has ever successfully made this kind of efforts, will deny the great and proper value in an educational system. These exercises unquestionably give a considerable degree of freshness and brightness to the mind, and it will be difficult to find dull persons ever succeeding in it, without losing much of their natural stupidity.

While thus fully admitting the importance of drill in pronunciation, conversation, and reading, I must yet confess that I do not believe the higher college or university to be the place where this drill should occupy so much time as would enable a beginner to learn to speak the language with fluency. I believe that most of this drill ought to be given in schools that prepare pupils for the university. The pronunciation of a modern language is best learned in early youth. When the student reaches the university, he ought to be able to give the greater part of his attention to those features of the language and its literature that address themselves to the higher faculties of the mind. Much as I value the spoken word, the correct pronunciation and facile utterance, I regard them as worse than useless if the student is not led to use them as the means for giving a truly intelligent insight into the laws of the language and a keen appreciation of its genius. The entire course of his college training should impress him with the almost sacred character of a cultivated language. That language is the most delicate, most admirable and most precious instrument of the human mind should be deeply impressed upon him. Only when this is conscientiously done by competent instructors may we look for the best and most satisfactory results of linguistic culture.

Every cultivated language bears upon its face the marks of the national mind. To study a foreign language is the quickest way to become familiar with the ideas, virtues, aspirations, and deficiencies of the foreign national mind. It is impossible that such study

should not have a tendency of expanding the student's range of mental vision, and of giving him enlarged sympathies. But it is, of course, necessary that the students' efforts should be guided by a judicious instructor. Only pure models of style, only compositions that reveal a fine and delicate talent, or are the productions of decided genius, should be used. There are as perfect models of style in English, French, and German as there are in Greek and Latin, but it is of the greatest importance to bear in mind that on the fertile grounds of literature the rankest weeds are frequently found by the side of the most admirable flowers. There can be no doubt that the proper work of university teaching, as far as the languages are concerned, should be to initiate the student to the rich fields of literature. The discipline to be derived from mere grammar drill, though essential, is yet of only elementary value. It is different with the study of literature properly speaking, and especially as regards modern literature. It is a truism, but one like many other truisms express a most important truth, that modern civilization, and hence modern literature, is essentially christian, while ancient civilization was essentially Pagan. This does not mean that all in modern literature refers directly to the christian religion, but that nearly all valuable literary productions of modern times owe their actual form and a great portion of their contents to the existence and influence of the christian religion. Our modern conception of duty, responsibility, virtue, etc., are widely different from the ancient conception. The most refined Greek had never any misgivings as to the moral wrong of the trade in human beings, of the lack of charity, etc. Greek philosophy never taught the dignity of labor in our modern sense, and it never had as much as the show of an idea as regards the universal applicability of moral laws. The idea that *all* men are free and equal, never entered the head of a pagan philosopher. And what is true of philosophy and religion is in the same degree true of exact science. Only the shadowy outlines of science were dimly recognized by the most gifted of the ancients. The stupendous wealth of conception and ideas which have entered into modern literature in consequence of the grand advance of modern science, has had its due share in making this literature so grand and original. But this is a subject which, to be treated with anything like the

attention it deserves, would require a book. The bare allusions to these facts will be sufficient. These facts certainly prove that modern literature and modern languages are productions so important and distinct that their study cannot be too warmly recommended. If pursued in the true spirit, and with adequate tact and judgment, it cannot fail to contribute largely to the realization of the fondest hopes of the philanthropist, viz.: the breaking down of those narrow prejudices which h ve so long separated mankind in hostile camps, and the virtual establishment of a reign of brotherhood and good will to all.

GREEK AND LATIN.

BY L. F. PARKER.

But few languages have been studied long or extensively—much less spoken—when they were not vernacular, and these few have attained this high distinction, usually, because of their theological or commercial bearings. The Sanskrit, long unspoken as a native tongue, is cherished by the Brahmins for the Vedas written in it; the Arabic is widely honored for its Koran, and the Hebrew for its old Tesatment. The French, too, is largely the medium of communication between different nationalities on the Continent, and even in western Asia, and the English is girdling the world, and infusing itself into remote regions, borne on by the power and commerce of those who speak it. But these bear slight comparison with the Latin and the Greek in the extent of their diffusion, time and space, in the attention given them, or in the objects for which they are cultivated. Though the latter have important ecclesiastical and theological relations, they have not been cultivated merely or mainly on their account. Their lofty and lasting prominence has been secured by their charming and elaborate structure, their rich literature, and their adaptions to mental discipline.

The Latin was carried out of Italy by the victorious Romans over Enrope to its Ultima Thule in the West, eastwardly into Western

In the article on "Greek and Latin" the following are some of the more essential errors:

	Error.	Correction.
Page 94, line 2,	when,	where.
Page 94, line 12,	,	in.
Page 94, line 16,	prominence,	preeminence.
Page 98, line 1,	perquisite,	prerequisite.
Page 98, line 17,	instruction,	introduction.
Page 98, line 23,	weight,	might.
Page 99, line 2,	properly,	perfectly.
Page 99, line 15,	present,	parent.
Page 99, line 17,	Woodbury,	Woolsey.
Page 99, line 22,	requisition,	acquisition.
Page 100, line 15,	eye,	age.
Page 100, line 29,	in,	to.
Page 100, line 32,	there,	their.
Page 101, line 18,	virtues,	writers.
Page 102, line 35,	adinorum,	asinorum.
Page 103, line 19,	call,	cull.
Page 103, line 21,	Kant,	Kant.
Page 104, line 16,	Russians,	Persians.
Page 104, line 30,	receiver he,	science she.
Page 105, l. 11 & 12	Bowen's	Bacon's.
Page 105, line 34,	professedly,	confessedly.
Page 108, line 5,	vocation,	vacation.
Page 109, l. 14 & 15	chemical,	classical.
Page 109, line 16,	runs,	sums.

Omit "or" in the 27th line of page 109, and italicize "parents," "uninstructed," "translations," and "constitute," in the quotations on pages 101 and 102.

Page	line	instead of	read
112,	8,	dreary,	every.
113,	3,	teachrs	teachers.
114,	12,	preceded,	presented.
116,	33,	this,	these.
117,	15,	greater,	great.
118,	3,	these, students,	these students.

Page	line	instead of	read
123,	5,	mostly,	nearly.
123,	11,	preporation,	preparation.
124,	2,	normal,	moral.
124,	27,	idears,	ideas.
124,	32,	relifion,	religion.
125,	2,	phrases,	phases.
125,	5,	shows,	shares.
125,	7,	deportment,	department.
125,	28,	oequirements,	acquirements.
126,	15,	thouht,	thought.
126,	21,	thorongh,	thorough.
126,	31,	Steps,	steps.
126,	31,	favorable.	favored,

Page	line		
127,	17,	for,	few.
127,	18,	number,	numbers.
129,	14,	insert "no" after "do."	

Asia, and south into Africa; but it shrunk back along the track of the retiring conquerors when they withdrew, leaving often only faint traces of its former use. The Latin language began to decline about the commencement of the christian era, and, eventually, faded out into Italian in Italy, and was broken up in France, Spain, and Portugal, into the basis of the modern languages of those regions.

Though the Latin ceased to be a vernacular tongue, it was adopted by the christian church as the language of its service, and by the learned as the language of literature and the medium of communication between themselves. Hence, when universities were founded in the Middle Ages, Latin was spoken by their faculties and students, though their Latin would, doubtless, have made Cicero or Quintilian nervous. Though the Latin has ceased to be spoken except in the councils and in the service of one branch of the christian church, and is rarely written, it has never ceased to be diligently studied.

The Greek, in this unlike the Latin, was carried beyond the boundaries of its native regions by those to whom it was an alien tongue. Before the Macedonian Supremacy, the Greek was spoken in Asia Minor and in Southern Italy, but these were Greek colonies. Alexander and his successors adopted it as their court language, and introduced it into Asia as far as the Indus, and into northern Africa. Greek literature was cultivated and Greek cities sprung up all along the line of their conquests. "Their campaigns acquired a character of profound moral greatness by the incessant efforts of the conqueror to amalgamate all races, and to establish under the noble influence of Hellenism, unity throughout the world."* Alexandria in Egypt was built to commemorate the name and to promote the aims of the Macedonian conquerer. It became a center of Greek learning, second only to Athens itself, and into its peerless library the available literature of the world was gathered in Greek translations.

Subsequently, the sturdy old Romans, with minds for business and muscles for action, became the conquerors of Greece and of the world, but they surrendered to the Greek. The Greek language charmed while its matchless literature fascinated them. The Greek writings were the stimulas and the guide of Roman literature, and

* Humboldt.

the Greek language was spoken by Roman tongues in the families at Rome; in its Forum and in the Senate. It became the language of learning and the learned throughout the empire. The orators, poets, philosophers, and princes sought Greek instructors, conned Greek volumes and became as skillful in the use of the Greek language as in that of their mother tongue. The Romans were proud of their Greek culture, and often attributed to it their success in life no less than in literature and in learning, but none more heartily or more frequently than Cicero.

The literary decline which corrupted the Latin language and the barbarian incursions which overwhelmed the Roman empire in the west and also the division of the Christian church into eastern and western, dissolved the power of the Greek in Latin regions and almost expelled it from them. However, it never ceased to be cultivated or, until within a few centuries, even to be spoken in portions of Italy. The modern revival of Greek learning commenced in Italy in the fourteenth century in the literary efforts of Petrarch and Boccacio, and extended throughout eastern Europe and constituted the core and largely the cause of the intellectual activity which agitated church and state, and eventuated in opening a new world in literature, in art, and in politics as really as in America.

The Latin acquired new honor as the poetry of Virgil and the philosophy of Cicero supplanted the mysticisms of the schoolmen, and the Greek became a fountain of western culture as it had been the source of the Roman fifteen centuries before. The science of that period, except mathematical, was meagre and formative, the literature was dull and frigid, and famishing minds longed for the sweet and luscious viands on those old Roman and Greek tables, as the plant loves to drink in the sunlight and to absorb moisture. It was natural and necessary, then, that the "revived" learning in colleges and universities should be almost wholly classical and mathematical. But this education, then "new," led to broad and broader fields of thought and inquiry until to-day we have literatures in living tongues never before equaled in extent and variety, and, as some believe, in richness also, and have a body of science more minute, vaster, and more exact than earlier scientists ever imagined. These modern literatures and this new science have won for themselves

an honorable place in courses of study, and, as life is not materially longer than formerly, it is questioned whether our present modified instruction in the classics should not be followed by its entire exclusion.

While cheerfully conceding and affirming the merits of the new and competing studies, we would suggest some of the reasons which induce most educators to advocate the retention of the classics in literary institutions, and even to urge the increase of facilities for their study.

CLASSICS, AUXILIARY TO SCIENCE.

The Latin and the Greek deserve a prominent place in every course of literary training because of their service to the study of science.

The names of the sciences are almost exclusively of Greek origin and their technicalities are derived from the Latin or the Greek. Orthography, Geography, Grammar, and Arithmetic are all Greek words no less than Logic, Rhetoric, Chemistry and Astronomy. The divisions of Grammar are from the Greek while the names of the parts of speech and their sub-divisions are from the Latin.

These are but fair specimens of the origin of scientific nomenclature. An effort was made by some who would fain dispense with Latin and Greek in the realm of science to introduce scientific terms from modern tongues, but it was as futile as the search for the philosopher's stone. Should this utopian effort succeed, even then words from Rome and Athens would still swarm in scientific definitions as thick and richly laden as bees about Mt. Hymettus.

This aid is abundantly attested, and by varied experience. Teachers of science to classes composed of classical and unclassical students bear emphatic testimony to the greater success of the classical scholars. Some instructors on the continent and some in this country go so far as to say that classical students "invariably" surpass others in physical science, and Prof. Thiersch says, "even mathematicians find a classical training superior to an exclusively scientific one even for their own specialty."

The continental universities reserve their highest scientific honors for those who have built their higher science on a classical foundation. The scientific schools in this country are still in their formative

period, yet some already make a knowledge of Latin a perquisite to the first degree in science. The entire drift—no, it is rather the intelligent and steady movement in scientific education is toward and in the enlargement of classical knowledge required or recommended. Charles Eliot, the young and accomplished President of Harvard University, when he was in the Faculty of a scientific institution, and in an article in behalf of "the New Education," wrote, "young men who are to devote themselves chiefly to other than linguistic studies after their seventeenth or eighteenth year have special reason to give a large portion of their time before that year to the study of language," and, again, "After English, the most desirable study for a boy is Latin." Classicists and scientists alike will, doubtless, accept Pres. Eliot as an "authority" on this point.

CLASSICAL STUDY THE BEST INTRDUCTION TO MODERN LANGUAGES.

The classics are useful auxiliaries in the acquisition and mastery of the continental languages. The language of literature is not the best instruction to any speech which is studied solely for its social or commercial uses. If a foreigner would acquire the English to use only as a traveler through our country, or as a merchant in New York, he will learn little in "Paradise Lost" which he can use in ordering his breakfast, and as little of service in selling his goods or posting his books. But if he would learn the giant weight of our tongue, the thoughts embodied in it which bear the soul up among intellectual Alps, let him study Milton, early, deeply, fondly. So, if physical necessities or business utilities impel a student to the acquisition of French or German, he can do better than read Racine or Goethe; but, if he would enlarge his mental power or his mental vision by the mastery of those languages, let him not overlook their noble dramas. To such a student previous acquaintance with the classics will be of greatest advantage.

The Latin and the Greek, and pre-eminently the Greek, by their refined analysis of thought, by their numerous etymological forms, their sharply defined syntax, their nice lexical distinctions, and by their long and vigorous* historic life, suggesting the changes of

*The Greek is a *living* language, though often called "dead." The literary words and forms in the Greek of to-day differ much less from those used by Plato and Demosthenes than the English of Lowell from that of Chaucer.

youth and exhibiting those of maturity, introduce the student to the philosophy of language more properly than any other tongues, living or dead. Were it possible to learn that philosophy without a knowledge of the classics, the time spent in the effort would be sadly misemployed. The student who comes to the study of modern tongues with the discipline acquired in that of the classical and with its comprehensive outlook, has an advantage much like that of the military officer, trained by many a triumph, who has looked down on his enemy's camp from a balloon. But there is a more obvious (though no more real) advantage to students of the Romance languages.

The languages of Western Europe are modified Latin or outgrowths from it, Latin under a veil, or more truly its offspring, and the family likeness is distinctly marked, so that one acquainted with the present can become acquainted with the children with little difficulty. The highest authorities give concurrent testimony to this effect. Ex-President Woodbury, late of Yale, a few years ago intimated that, were he responsible for the best possible training of a pupil in a four years' course in the four leading Romance languages, he would teach him the classics exclusively during the first two years and devote only two years directly to the four modern tongues. His successor, Pres. Porter, claims that for the requisition of these languages "the thorough study of Latin will be a positive gain so far as *time* is concerned." John Stuart Mill makes the same claim and asserts that the mastery of the Latin makes it easier to learn four or five of the continental languages than it is to learn one of them without it.

THE STUDENT OF HISTORY SHOULD BE A CLASSICAL SCHOLAR.

Europe and its colonies constitute the most important portion of the world, and their political, intellectual and moral condition and tendencies are the matters of profoundest interest to him who would understand the world as it is. The present condition of these nations is an effect, in the main, of causes which had their historic origin among the people of Italy or Greece, or those which became potent among them by the aid of the classic languages. It is an important fact that the sceptre of the world passed from Greek to

Roman hands and was then shattered by the tribes of the north, and that the foundations of these modern nations were laid on the ruins of the Roman empire, but it is a fact, certainly no less important, that the Greek and Latin languages and literatures have been mightiest agencies in all their subsequent civilization and progress.

The treasures of history lie below chronological tables among the influences and causes which modify or mold individual and national life. After all fit concession to other causes, the noblest advancements in freedom and culture cannot be explained without reference to the ancient world any more than the growth of the plant can be referred to the influence of sun and moisture alone, ignoring the rich soil whose elements have been wrought into leaf and flower. In alluding to this fact no man becomes more poetic in his prose than Macaulay, when he says: "All the triumphs of truth and genius over prejudice and power, in every country and in every eye, have been the triumphs of Athens. Wherever a few great minds have made a stand against error and fraud, in the cause of liberty and reason, there has been her spirit in the midst of them, inspiring, encouraging, consoling,—by the lonely lamp of Erasmus, by the restless bed of Pascal, in the tribune of Mirabeau, in the cell of Galileo, on the scaffold of Sidney." * * * "The power is, indeed, manifested at the bar, in the senate, in the schools of philosophy, on the field of battle. But these are not her glory. Wherever literature consoles sorrow or assuages pain, wherever it brings gladness to eyes which fail with weakness and tears, and ache for the dark house and long sleep—there is exhibited, in its noblest form, the immortal influence of Athens."

THE CLASSICS—A FOUNTAIN FOR MODERN WRITERS.

The indebtedness of modern literature in the classics should not be overlooked. The streams from Greek fountains which fertilized the Roman literature in the Angustan age were so direct and pure that there Hellenic origin has never been questioned, yet those which adorn and enrich our own, flow as truly if not as obviously, from classic sources. Goethe, Milton, Wordsworth, and Bryant, like

Virgil and Horace, have drawn their inspiration from those who drank at Helicon and Parnassus, for there they fed—

> "On thoughts that voluntary move
> Harmonious numbers."

The charms and the magnetism of Addison, Johnson, Macaulay, Bancroft and Emerson are the charms and magnetism of classicists. Emerson's words concerning Oxford, its "atmosphere is loaded with Greek learning," may be applied to the whole of our modern literature, changing the word "Greek" to "classic," for modern writers have drank in much of the classical spirit, though some of them may have obsorbed more. Classical culture is all pervasive in modern civilization, and there is not an intellectnal sense to which it does not appeal nor an avenue through which it may not enter the mind. The mind, like the body, is usually nourished by voluntary and conscious efforts, but, often, unconsciously, also, by absorption, and it may be a question whether common opinions and mental tendencies are not formed as much by the latter process as by the former. The richness and sweetness of many virtues consist of classic elements though they never visited their source and are unaware of their origin.

Aside from all classical allusions, the very source of our literary terms is eminently suggestive. While words of every-day life are chiefly of Saxon origin, and those of fashion and romance come from the French, the technical terms of the higher arts, the sciences, philosophy, and the best literature, are from the Greek and Latin. A few quotations (in which the italicized words are of classic origin) will illustrate this point. They are believed to be fair specimens, and the thoughts are pertinent to the general discussion. In the Atlantic Monthly we find an article by Pres. Eliot, of Harvard, and quote the following:

"*Partial* or *special students* are of two sorts in most of the *technical schools*. First, Men of age and *acquirements*. Secondly, Young men of *imperfect preliminary* training, whose parents think, or who themselves think, that they can best become *chemists* by *studying* nothing but *chemistry*, or engineers by only *attending* to the *mathematics* and their *applications*, or *architects* by *ignoring* all knowledge but that of *architectural design*. This *notion* is, *certainly*,

a very *crude* one; but it deceives many uninstructed parents and inexperienced young men."

Hon. Joseph Story, one of the ablest jurists ever on the United States supreme bench, uses this language:

"To be *ignorant* of these *languages*—the classics—is to shut out the lights of former times, or to *examine* them only through the glimmerings of inadequate translations. What should we say of the *jurist* who never *aspired* to learn the *maxim* of law and *equity* which *adorn* the *Roman codes?* What of the *physician* who could *deliberately* surrender all the knowledge heaped up for so many *centuries in the Latinity of Continental Europe?* What of the *minister* of *religion*, who should choose not to *study* the *scriptures* in the *original* tongue, and should be *content* to trust his faith and his hopes for time and *eternity* to the dimness of *translations* which may *reflect* the *literal import*, but *rarely* can *reflect*, with unbroken force, the beautiful *spirit* of the *text?*"

The following extract is from "Lectures on the English Language," by Hon. George P. Marsh, one of the ablest ministers of the United States to European courts:

"I do but *echo* the *Universal opinion* of all *persons competent* to *pronounce* on the *subject* in *expressing* my own *conviction* that the *language* and *literature* of ancient Greece constitute the most *efficient instrument* of *mental training* ever enjoyed by man, and that a *familiarity* with that wonderful speech, its *philosophy*, its *eloquence*, and the *history* it embraces, is, *incomparably*, the most valuable of *intellectual possessions.*"

CLASSICAL STUDY INTRODUCTORY TO THE PHILOSOPHY OF ENGLISH GRAMMAR.

The mastery of the laws of the English language will be best attained by the study of the classics. Though the Saxon elements of the English are more numerous than the Latin and the Greek, the number and, especially, the character of the latter, are such that no student can wisely ignore their source. The more difficult syntactical principles of the English are pre-eminently classical and the English student's "*pons adinorum*," the infinitive and the participle, cannot be passed safely without a classical guide.

We will not say with Goethe, "he who knows no foreign tongue, knows *nothing* of his own," but rather that he has, probably, not learned its sweetness, felt its power, or mastered its laws. If any have done this by the study of English alone, we will simply suggest, "there is a better way."

CLASSICAL STUDY A DRILL IN PRACTICAL LOGIC.

Linguistic study is an exercise in applied logic, and of the most practical sort. The study of mathematics is also an exercise in logic, but pure mathematics belong exclusively to demonstrative reasoning. The questions of real life,(though thought and the power of thought are far from being the *least* "real" things in the universe) on the farm, in the workshop, and in the office, the problems of business, of society, and of the State are within the limits of the possible or the probable, and without the range of the demonstrable. The process by which the young man selects his life-work, by which the farmer determines what to sow, and the statesman what laws to enact and what penalties to annex, is one of probable reasoning, and that only. In daily life men commence with premises which are probable, proceed by relations which are probable, and, at last, call out of many possibilities those which seem most probable. The "Pure Reason," as Kent terms it, presides over none of those judgments; that which is employed, the German might well call "mixed," and is often badly mixed, too. It is the judgment which we need in business life, and which should be liberally cultivated in preparation for it. The work of translation is a perpetual drill of this very kind, forcing the student to a constant balancing of the most varied, and often the most perplexing possibilities.

An Iowa jurist* has well said that a classical student "could not translate a page without the exercise of his reasoning powers, but the factors which enter into his calculations are grammatical dependence, logical sequence, historic truths, poetic beauty, and all the the accumulated treasures of Geography, Ethmography, and Archæology."

CLASSICAL LANGUAGES—A MINE OF ARCHÆOLOGY.

The value of the classics with reference to the pre-historic history

* Austin Adams, Esq., in an address in advocacy of "Classical Learning."

which they involve, and to which they lead, is just beginning to be appreciated, and has been hinted already. Philology is now taking rank as one of the departments of Archæology, and while Darwin is seeking to trace man's physical origin and development, and Lubbock is enquiring concerning his early intellectual and social state, philology comes laden with jewels for the enquirer as to the original unity or plurality of mankind. These are older than all formal records, and imbedded in language itself. Languages are vast store-houses of human history, and much of it is "fossil history," just that which modern research is seeking to recover from shell heaps, ancient mounds, and from lake beds. Our own Smithsonian Institution is zealously working this mine, and its last volume is a valuable "contribution" to this special department.

Philology has already shown that the ancestors of the English, French, Germans, yes, that the Celts, Teutons, ancient Romans, and Grecks, the Russians, and a portion of the East Indians, were once one family, and at home on the plateaus of the central part of Western Asia. Though no traditions point to that spot or to that time, though all memory of it seems to have been lost before the earliest records of any of the original family, linguistic evidence has satisfied all investigators that the family was peaceful and happy—one in which the father was recognized as a protector, the brother as an assistant, and the sister a source of joy; and that members of it understood many of the useful arts, such as weaving, agriculture, horticulture, etc. The Smithsonian writer referred to, says, and very justly, too, "The achievements of comparative philology have been so brilliant and remarkable as to justify the expectation that, with its augmented means and improved methods, it will yet be able to solve the great problem of the linguistic unity of mankind, of which, as a receiver, he has assumed the charge."

While the history of the outer life is very important, that of the world's earliest thoughts and thinking is still more so, and nowhere can evidence, so ancient and so trustworthy, be found as in language. Ben. Johnson's remark, "Words best show a man," is emphatically true of a people. Ideas first exist and then words to represent them, and the words are their best possible representatives. The antecedent idea of a cablegram in the American mind has just

introduced the word into our speech, and the existence of the word would prove to all inquirers that the idea had existed previously. The Latin and the Greek actually sparkle with bright images of primeval feelings and conceptions.

Thus, in addition to all truths put into sentences, there are those in words themselves which are of highest value to the historian, the antiquarian, and metaphysician. Yet no language yields its richest treasures except when studied especially in relation to its own group. i. e., philologically, and in the Indo-European system the classical languages occupy the leading philological position. Though the discovery of Sanskrit has built up a science of philology, as Bowen's principles created the system of physical science, it is not the keystone or the foundation of the philological arch,* but comes next in importance to the Latin and the Greek.

IMPARTIAL TESTIMONY.

By a happy infirmity of human nature, one can become so interested in that on which he labors, as to detect excellencies there which are invisible to other eyes. Let intelligent witnesses, unprejudiced by their vocation, give testimony. Should any well informed person be asked to name four of the ablest English-speaking analysts of the human mind, and those, too, who have studied the problem of education most profoundly, he would doubtless name President McCosh, of Princeton ; President Porter, of Yale ; Sir Wm. Hamilton, of Scotland ; and John Stuart Mill, of England.

* President McCosh says : "I am prepared to vindicate the high place which has been accorded to languages in all the famous colleges of the old world and the new." "Among languages, a choice must be made, and there are three which have such claims that every student should be instructed in them." "The Latin "is of inestimable value from its literature—second only to that of Greece in the old world, and to that of England and Germany in modern times ; and a model still to be looked to by English and by Germans, if they would make progress as they have hitherto done." "Then

* Prof. W. D. Whitney, Professor of Sanskrit at Yale, and professedly the ablest Sanskrit scholar in America.

* In his Inaugural address, at Princeton.

there is the Greek, the most subtle, delicate, and expressive of all the old languages, embodying the fresh thoughts of the most intellectual people of the ancient world, and containing a literature which is unsurpassed, perhaps not equaled, for the loveliness, purity, and grace of its poetry, for the combined firmness and flexibility of its prose." * * * "I believe that our language and literature will run a great risk of hopelessly degenerating, if we are not ever restrained and corrected, while we are enlivened and refreshed by looking to these faultless models."

President Porter, in his "American Colleges and the American Public," maintains "that, for the years appropriated to school and college training, there is no study which is so well adapted to mental discipline as the study of language." The study of the classical languages should be universally preferred to any other as a means of discipline in every course of liberal education, and should continue to be made prominent and necessary in the American colleges." "We contend, moreover, and it is generally conceded, that in disciplinary influence, the study of the classics is far superior to the modern tongues."

Sir William Hamilton, in the Edinburgh Review, for October, 1836, asserted that the study of classics, "if properly directed, is absolutely the best means toward a harmonious development of the faculties—the one end of all liberal education."

John Stuart Mill, in his famous University Address at St. Andrews, Scotland, in 1867, affirmed and re-affirmed that in disciplinary and in general educational value, "the classical languages have an incomparable superiority over every modern language, and over all languages, dead or living, which have a literature worth being generally studied." * * * "Human invention has never produced anything so valuable, in the way both of stimulation and of discipline to the inquiring intellect, as the dialectics of the ancients."

Should we extend our inquiries across the English Channel, to the French philosopher, Cousin would tell us, "classical studies are, in truth, beyond comparison, the most essential of all, conducting as they do to the knowledge of human nature." * * * * "To cripple, far more, to destroy them, would in my eyes be an act

of barbarism, an audacious attempt to arrest true civilization, a sort of high treason against humanity."

From the mass of similar testimony from the highest sources, and those wholly unprejudiced by professional connection with classical instruction, one quotation more must suffice:

Goldwin Smith, late Professor of History in Oxford, England, and now lecturer in an American institution, anything but partial to Latin and Greek, ventures to the very verge of prophecy in a paper read at Albany, in 1869, as follows: "Greek seems alone worthy to be the organ of the human mind. So marked is this superiority, indeed, that I can hardly believe that the destinies of the two ancient languages are yet accomplished, or feel sure that Latin will not some day again be the language of Law, and Greek the language of Philosophy and Science."

CLASSICAL STUDY, AN ABIDING BLESSING.

If classical students neglect and forget the minutiæ of their linguistic studies when involved in the whirl of American life, it is equally true of the mysteries of mathematics and the technics of physical science, but the conclusion sometime drawn, that they are therefore useless, is a non-sequitur. The broader and juster views of man, his capacities, his history and the conditions of human progress, and the strength of mental muscle and the better command of it acquired, will remain, and, even should all be lost save their influence as a gymnastic, a grand advantage is still retained. The work of the invalid may be good, but the health he gains by it is better; the handiwork of the apprentice may be worth preserving, but the skill of hand and eye and mind acquired in making it is incomparably more valuable. Yet it is a remarkable fact that to no class of studies in the ordinary college curriculum have the most eminent graduates accorded more honor, or turned so frequently from the dull routine of business or the cares of state to find refreshment and renewed strength. Milton was not alone in the linguistic taste which led him to devote five years after his university course entirely "to the perusal of the Greek and Latin classics," and afterwards to boast that he had "not merely wetted the tips of his lips in the stream of those languages." Many orators like Burke and Pitt and

Curran have continued to draw inspiration from classical sources, while many of our best elucidations of classic themes and of ancient life have been produced as the recreations of statesmen and of cultivators of other fields. When in this generation Lord Derby translates Homer, when Gladstone, in the vocation of "England's business," writes Juventus Mundi, and our own Bryant crowns his life and American literature by giving the world his Iliad and Odyssey, they are but "bright, particular stars" in the large and ever-growing constellation of life-long students of the classics. A return to the classics has often refreshed weared minds as the touch of earth is said to have given new strength to the exhausted muscles of Antæus.

FACTS OF THE HOUR.

The classics were never studied so extensively or so intensively as at present. The best old-time colleges and universities like Harvard and Yale, and Princeton now require a more complete knowledge of the Latin and the Greek to enter than was once demanded for graduation, and then follow the years of college study, and after that post-graduate lecturers and courses annually increasing in number and extent. Students, too, show their appreciation of classical study by electing it when made wholly optional, especially, after having a sufficient acquaintance with it to judge of its value, as at Harvard last year, where 110 of about 130 sophomores chose the Latin and the Greek. In the wideniug range of elective studies there, the number of students of the classics (as of every other branch) diminished in the junior and senior years, yet the examining committee call special attention to the fact that, "of the first ten in the senior class, eight elected Latin, and many of the highest scholars were found in senior Greek division."* But this senior work seems to have been their *seventh year* of classical study.

Classical courses, so called, are, properly, *semi-scientific*, and but few colleges have opened courses which are wholly unclassical, —most of these institutions have abandoned or partially classicized such courses by requiring some classical study before or in them.

*"Old and New," July 1871.

The test of the comparative excellence of these courses has not been prejudical to the 'semi-scientific.' The testimony of Professors in the University of Michigan, the only institution in the world which has given so fair a test of the different courses, is too direct and too valuable to be omitted. In the "Old and New" for July last, Prof. H. T. Frieze has the following emphatic words: "It must be said in all candor that an experiment of twenty years, placing the newly arranged courses side by side with the classical, and securing to all of them opportunities, corps of instructors, college rank, and graduating honors, *absolutely equal*, has convinced both teachers and graduates that the classical course has not yet been *equaled* by any other, whether in *disiplinary influence* or in actual *attainment* of *knowledge*.

Prof. J. K. Boise, now of Chicago University but late of Michigan University, says, of the latter institution that nearly every year, some of the scientific students pass over to the chemical side and that the chemical students have been much more fortunate than others in obtaining responsible and lucrative positions, and then runs up the matter thus: "*In financial value* a classical education is *superior*, not to speak of its superiority in other and *far more important* respects."

It should be borne in mind that this comparison of academic courses does not apply to the courses in our University, for the Faculty, (before I became a member of it,) fully up with the wisdom of the times, required three years of classical study as a pre-requisite even for the scientific degree. The experience of Michigan University proves that the classics should be admitted into the scientific course. The narrow-guage in education, whether narrow by excluding classics or science, is too narrow for our liberal age, or too narrow for liberal Iowa.

Justice to my subject demanded more; justice to my readers, perhaps, less. Some statements quoted may have been universal when they should have been general, or general instead of particular. I have given them as their author's, and as worthy of thoughtful consideration.

In providing for the higher education, Iowa will surely give her sons and daughters the option of the *most liberal* classical culture, and provide the *best facilities* for it.

THE LABORATORY OF PHYSICAL SCIENCE.

BY PROF. GUSTAVUS HINRICHS.

"Knowledge is Power;" at least the knowledge of physical science; for the most characteristic features of the present phase of modern civilization have been brought about by this power. And as the knowledge of physical science is being diffused in constantly wider circles, especially since active measures are being taken, both in this country and in Europe, for the introduction of physical science into the common schools, we may reasonably expect that these characteristic features of the present will become more marked yet in a near future.

While it is not necessary to demonstrate that knowledge of physical science gives great power to man, it may be desirable to present a few facts which prominently exhibit this power.

The steam-power used by Great Britain is obtained by the combustion of annually twenty millions of tons of coal. But one ton of coal thus consumed does the work of about seven laboring men, working hard all the year round. Since the maintenance of one active laborer requires a family of at least four persons, then 20,000,000 tons of coal represent the muscular labor of 140,000,000 strong laborers, or a population of 560,000,000 persons, fully eighteen times as many as actually inhabit the British Islands. In other words, the possession of the knowledge of physical science enables Great Britain to exert a mechanical power equal to a nation almost twenty times as numerous, but not possessed of that knowledge.

This same knowledge gave the North a great advantage over the South in the late civil war; for the burning of 20[illegible],000 tons of coal per annum under the boilers of northern factories performed as much mechanical labor as 1,400,000 able-bodied, full-grown slaves could annually perform for their masters.

Physical science also gives greater power to the politician; for the words spoken anywhere in this Union are, if of sufficient importance, by telegraph communicated to every city in the land, and inside of twelve hours every intelligent voter of the country is

influenced by these words spoken to comparatively few persons in a single place!

But the steam-engine and the electric telegraph have been obtained by the effort of patient workers in physical science. To such, each new fact is of highest importance and is carefully investigated. The apparently useless discovery of Galvani, the construction of the galvanic battery by Volta, the observation of the deflection of the magnetic needle by the galvanic current, constitute the stepping stones in the invention of the electric telegraph. The submarine cables, connecting the distant continents, are worked in the manner first suggested by Oersted. A fourth fact, the temporary magnetization of soft iron was first used practically in the physical laboratory, (Henry), where Steinheil and Morse constructed their special systems of telegraphy now most extensively used.

The common popular notion, that such great inventions are chiefly due to the exertions of *practical* men of questionable or no education, is even less true, than the statement that we owe more to the baker and the butcher, than to the farmer. For without the constant toil of the farmer raising cattle and crops, neither butcher nor baker would be able to ply their vocations.

If it were necessary to add to the above in order more fully to show the power of physical science, we might ask how many industries, now supporting thousands of families, have resulted from investigations in physical science? How many photographers are there in this country alone? How great is the value of coloring and antiseptic compounds now manufactured from coal tar, which used to be considered a waste product and a nuisance? How many workmen find profitable employment through the—by science—improved methods of smelting iron and manufacturing steel? How many, again, are engaged in the conversion of these vast masses of raw products into stupendous bridges, almost unending railways and machines without number? How many centuries would it have required to pierce the Mount Cenis by muscular labor (if it could ever have been undertaken in that manner) instead of by the power of water and air, controlled by the *knowledge* of physical science in the possession of the engineer?

But not only does physical science confer great mechanical power

upon the nation possessing and cultivating the same, but physical science contributes also a very essential part to the enlightenment of the race. This will probably be appreciated from the fact that it is manifestly impossible to burn elderly ladies as witches, when the weather is successfully predicted by scientists at Washington, London, Berlin, Vienna, and Paris. If much of superstition yet remains, it is due to the fact that the proper study of physical science has not yet become an essential part of the work of dreary common school.

This neglect of physical science by our schools is commencing to be felt as a very serious defect of the common schools of the present. Especially in England, but also in this country, efforts are being made to remedy this state of things. In a not very distant future every town of five thousand inhabitants will have a school-laboratory for the study of physical science, equal to that of the Iowa State University at present, and even the humbiest village school will possess a separate room devoted to laboratory purposes, so that every child, attending the common schools, will learn the rudiments of physical science, not by hearsay merely, but by actual experiment and observation. In that day our present schools will be looked down upon as we look down upon the educational system of the dark ages. In the dark ages no efforts were made to instruct the masses in the rudiments of the letters which were taught only to the few ; so at the present only the few study by actual experiment and observation the laws of the physical world, while the masses at the most are taught to read, to write and to cipher. Even if the child attends school for a number of years, the present system only trains a few of its faculties (especially the memory) but leaves the growing mind in utter darkness* about the great world of matter wherein we live and upon which we depend at every step of our life upon this earth.

If, then, the knowledge of physical science is *power*, both mechanical and intellectual, it ought to be thoroughly taught in our highest institutions of learning—as it is done in those of Europe. This requires above all *laboratories*, *apparatus* and *qualified teachers*.

* This accounts also for the rapid spread of some "*isms*" which are most positively contradicted by the phenomena of the material world. A highly finished literary education is of course no obstacle to the spread of such isms.

But if the rudiments of this knowledge ought to be imparted to every child attending our common schools, then the laboratory of the State University ought to train teachrs who are able to correctly teach these branches ; that is by experiment and observations not by mere talk and show.

THE COURSE OF STUDY

at the laboratory of the Iowa State University has been arranged with the view to meet the above requirements. It is carefully *graded*, so that the general and fundamental elements and principles have to be mastered before any students can be admitted to special branches of physical science.

The general courses require two years for completion, and are obligatory upon all students of the academic department ; the special courses are all *elective.* This arrangement of our course of study in physical science has met with most favorable recognition both abroad* and at home.† For further details of this course of study we must refer to the *School Laboratory of Physical Science* for 1871.

METHOD OF INSTRUCTION.

At this laboratory no one single method of instruction is followed, but all branches of physical science are taught by the following methods *combined* in the order here given:

I. The student is assigned a lesson in his text-book to prepare himself for the LECTURE given on the subject assigned. Without such preparations lectures cannot yield satisfactory results; at the same time the lecture is necessary to impress the student by the living word, to exhibit the apparatus referred to in the book, and to

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* The editor of *Nature*, published at London, says: "such is Prof. Hinrich's idea of a sound scientific training, and a very admirable one it is. To carry it out we must strive after good teachers, capacious laboratories, and trustworthy text-books.

† A recent editorial in the *Scientific American* says: "This strikes us as the only sensible way in which to impart instruction in science, and after it has been practiced for one generation the condition of society will be found to have vastly improved. *The best interest of education demand that we should begin at the bottom of the ladder, and not at the top.*

show some of the general phenomena of which no written word can give an adequate idea. This first part is the so-called *lecture-system*, so much used in Germany. Such lectures can only be given by the most competent teachers.

II. The student is now prepared to *recite* on the subjects thus presented in the lecture, and again studied at home preparatory to the recitation. In these recitations the student learns to *express* the knowledge gained; and the teacher is enabled to judge of the faithfulness wherewith the study has been pursued on the part of the student. This second step constitutes the so-called *Recitation-system*, characteristic of American schools. For the study of physical science it can, however, be of no use, unless presented by the lecture system as above stated. Instructors and tutors can properly perform this work of hearing recitations.

III. When the students thus have become familiar with the leading facts and laws by lecture and recitation, they are able to *verify* the same, and thus to obtain that *conviction* of the truth of the laws and principles without which physical science cannot be said to have been studied at all. Therefore the students are admitted to the laboratory, where each one carefully experiments and observes, measures and weighs, records and calculates, *so as to become personally convinced of the truth of the laws stated* in the book and in the lectures, and repeated in the recitations by the student. Only by this *laboratory practice* can the student become acquainted with the real *methods and limits of science.* Without such laboratory practice the study of physical science is but a nominal one. Branches of physical science figuring in the catalogues of colleges and schools not affording such laboratory practice, really is but adding to the literary branches of study others of very questionable value.

But the laboratory work should *fully* demonstrate the truth of the laws stated; and this cannot be done, except the work be not only qualitative, but also and *essentially quantitative*, for all things in the material world are governed by measure, weight, and number

This laboratory work, has long been practiced in the most advanced schools of Europe, admitting only professional students; it alone has led to the discoveries of modern science. I have for years been

at work devising plans and means to enable schools of lower grade to introduce this system of instruction. The results of these labors have been published in my "*Elements of Physics*," and "*Elements of Chemistry*," now used in the laboratory of the State University. "*The Elements of Cosmos*" are in the course of preparation. The preparation of these courses for this laboratory has proved exceedingly laborious, but the results obtained by the students in actual practice at the stands in the laboratory do amply repay our labors. Besides we have the great satisfaction that this work has contributed to direct the attention of eminent men to the State University of Iowa in general, and to its laboratory in particular to such an extent as to urge the introduction of this reform in science-teaching in wider circles.*

In view of such results, I shall not complain because these labors have almost completely prevented me from continuing my original researches

WANTS OF THE LABORATORY.

Having as briefly as possible represented why physical science hould be taught and *how*, and having by a few quotations shown that the work done at this laboratory is approved by those best qualified

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Rossiter W. Raymond, United States Commissioner of Mining, editor of the *Engineering and Mining Journal*, New York, says in an editorial:

We welcome as an earnest of a better era coming, (in regard to science instruction) several publications which have reached us from the IOWA STATE UNIVERSITY. We refer to several numbers of "*The School Laboratory of Physical Science*," and a manual called "THE ELEMENTS OF PHYSICS, Demonstrated by the Student's Own Experiments," prepared by Professor Gustavus Hinrichs, expressly for use in teaching this science by the experimental method.

In an editorial in the *London Scientific Journal* "Nature" begins as follows:

"By resolution of the Board of Regents, in 1870, the Iowa State University has finally cut loose from the old college course. Only by this resolution, *placing the elements of physical science at the very beginning of the course*, can instruction in science become thorough. For the first time the students in physical science have been offered facilities not too inferior to those they have for ten years enjoyed in other branches of learning." And with what results? "A marvel of studuous industry there" (in the laboratory). "Young men and young women, boys and girls, measuring, weighing, testing, demonstrating and rending facts upon fact in physics, that, at least in our school days, were pored over in a maze of bewilderment, in dryest of text-books, to be bolted in sections without question." *We trust that these important reforms in science-teaching will prove contagious, and spread rapidly from the plateau of Iowa City to a region of even greater extent than the American continent.*

to judge, it remains only to state how far the means of the laboratory will permit the work thus begun to be continued. If the means are inadequate, if the number of young men and young women from all parts of Iowa seeking the advantages of this laboratory, is much greater than the laboratory can accommodate, the question will have to be decided by the Legislators of Iowa, whether the most necessary facilities shall be provided by appropriating the necessary funds for the purpose, or whether the work shall be stopped where it originated, although eminent scientists have declared this work to be worthy of great extension.

I. ROOM.

During the last school year, 184 gentlemen and 108 ladies, or a total of 292 students, received instruction at this laboratory. This year already 250 students have practiced in the laboratory. But the rooms of the laboratory are utterly inadequate to give proper accommodation to so many students; they have, therefore, only practiced about one half as much time—or even less—than they ought to have spent at the stands in the laboratory. Unless we are prepared to say that this practical study shall be discontinued, we must provide at least as much more working room as the laboratory now contains. While in every other laboratory students in chemical analysis have a stand assigned to each one individually, we are compelled to limit the student's time to assign *three* and more students in analysis to the *same* stand ; besides, we have to use same stand also for the accommodation of two other grades of students! To add to all this difficulties of insufficiency of room, we suffer from inadequate ventillation in the laboratory rooms. We have now fully thirty students in qualitative analysis ; of these quite a number will want to take up urine analysis and toxicology next year ; shall *such* work be done by advanced students in a badly ventilated room, where the younger men and women have to recite and to practice in experimental physics ?

It is absolutely necessary that a hall be erected for the accommodation of students in practical physics and chemistry. A first story of a wing of a substantial LABORATORY BUILDING ought to be built, costing about $20,000.00. If these funds cannot be provided, a temporary frame building of sufficient capacity might be put up for

about $5,000.00. If that cannot be had, we must admit and acknowledge, that the students coming to the State University of Iowa *cannot* find the accommodations required for the study of practical physics and chemistry.

If such a laboratory building * were begun, it ought to be provided with a square tower to serve as a station for the observation of the principal meteorological constants.

II. APPARATUS.

At no time in the history of this university has a large appropriation been made for chemical and physical apparatus; nor has any considerable collection of minerals been procured. Smaller amounts appropriated from time to time have been expended for common articles and especially for materials and glass ware consumed by students and in lecture experiments.

For the *lowest grade* of students we have constructed a greater number of simple apparatus, constantly used in the laboratory practice. This apparatus is in part described in the elements of Physical Science and in the School Laboratory above mentioned; the importance of this apparatus to the student can, however, only be fully appreciated by a visit to the laboratory.

For the students in the *second years' course* we have, however, hardly any apparatus, although that class of students numbers upwards of sixty. We need for this grade a considerable number of instruments of moderate precision, such as *balances*, *spectroscopes*, *electroscopes*, *galvanometers*, *microscopes*, *theodolites*, *cathetometers*, *volumeters*, and a great many other instruments. Also a set of *self-registering meteorological instruments* is very much needed, both for the students, and to obtain authentic and complete records of the atmospheric phenomena for this region of the State. Such records are destined in a near future to be of the utmost value in regard to all chimatological questions.

An appropriation of $4,000.00 would permit the purchase of the most needed physical, chemical and self-registering meteorological instruments. Since these instruments retain their value if properly

* In the first number for 1872, of the "School Laboratory," may be found further details concerning such laboratory building.

used, the above sum would represent only an actual expenditure of about two dollars per term per student.*

Besides these, students in the first and second grade, (Elements and Principles of physical science), there are many in the *special branches* of physical science, such as Agricultural Chemistry, Technical Chemistry, Mineralogy, Crystallography, Analytical Chemistry, both qualitative and quantitative, general and special. Young men, intending to teach science, have left Colleges east and come out west to the Iowa State University to study such branches of physical science. Shall nothing be done for such students, and shall our own young men leave Iowa for Europe in order to continue their studies in physical science here begun? If we wish to retain such students at this University, something will have to be done to procure the necessary *apparatus of research*, apparatus of higher degree of precision. At least a *beginning* ought to be made by appropriating $2,000.00 for such apparatus, to form the nucleus of a real cabinet of apparatus for advanced students.

Another great want of the laboratory is a good and sufficiently extensive cabinet of *minerals*. Minerals form the basis of a great many highly important industries, and the State University ought to be able to show its students at least some of the manifold treasures of the mineral world.

III. TEACHING FORCE.

The amount of work done in the laboratory is much greater than the present teaching force will be able to continue. It is not only telling on the health of the writer, but even the younger instructors, who have been subjected to this work for but a few years, are beginning to suffer from it.

The laboratory practice is not an imitation of the work done by a few of the most advanced students in post-graduate courses at European laboratories, but it is an organic outgrowth of our American *common school system*, aiming, first, to instruct and benefit the many, rather than to secure the highest culture in a few.

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* Each term, $2.00, would be $6.00 per year for each student. Sixty students in the class would give $360.00 for the class per year, representing the interest of $3,600.00.

CONCLUSION.

A visit to the laboratory will, we confidently assert, prove to any one that the wants above specified are *real*, and that the laboratory will be unable to properly instruct the students coming to it from all parts of the State, unless these wants are satisfied.

The growth of the State is so rapid, that its institutions of learning fall behind, unless their development is apace with that of the State at large. So far, the growth of the laboratory has been satisfactory; in less than six years the rooms provided for the laboratory and thought to be ample by many, have become utterly insufficient. At present, the above wants of the laboratory must be satisfied, or it will become unable to give that practical instruction which is demanded by the students who throng its rooms.

NORMAL DEPARTMENT.

BY PROF. S. N. FELLOWS.

Rev. George Thacher, President of the Iowa State University:

DEAR SIR:— In accordance with your request, I respectfully submit the following report and recommendations:

In August, 1867, I was elected Principal of the Normal Department. During the two or three years that followed, I gave the subject of normal instruction much earnest thought and careful investigation. I endeavored to look over the whole field and to inquire, not only what are the educational wants of Iowa to-day, but what will be the wants of the future. It seem to me, that by wise legislation, that should look to present and prospective demand of education, such a system of normal schools might be secured as would compensate, in some degree, for the apparent delay in their establishment.

The plan which I at length adopted, I had the honor to present in a report to the Iowa State Teachers' Association, held in Marshalltown, in August, 1869, in the following language, viz.:

"It will be remembered that the State University is at the head of the free school system in Iowa. Students from every part of the State, having begun and carried forward their education in the district and high schools of the various counties, may resort to the University and enjoy freely the facilities there afforded for completing a classical, scientific, and professional course of instruction.

"Your committee would suggest as the University is at the head of the free schools, so the normal department should be the recognized head of the normal schools of the State; that there be established also, from year to year such a number of normal schools as the wants of the State may require; that these normal schools be properly distributed throughout the State; that they all be of the same grade, each having a limited course of study and furnished with all the facilities of a training school, where teachers in large numbers may be gathered and receive preparation for teaching in the primary grades and in the common or district schools of the State. The normal department should have a more extended course of study and facilities for a more complete scientific and professional training; so that even graduates of the elementary normal schools may, if they desire, attend the University, and in the normal and other departments, pursue a more extended course of readings, study and lectures, professional and scientific, and receive a certificate or diploma corresponding to their proficiency." This report was unanimously adopted by the State Teacher's Association.

One year after the above action, the National Normal Association, at its session held in Cleveland, Ohio, August, 1870, received and adopted a similar plan, which was presented by Professor W. F. Phelps, of Minnesota, in the following clear and forcible statement, viz.:

"The work of the primary teacher is so distinctive and peculiar in its character and aims, as to demand a peculiar and distinctive training therefor—a training especially adapted to the circumstances of the case. In like manner, the instructor in the higher departments of education, has a work more especially his own, differing widely in its motives and aims, and demanding attainments and qualifications very different from those of the elementary teacher; and the training

of these teachers for advanced schools should be suited to their conditions and necessities. In other words, the necessities of our system of public education at the present time, demand not less than two grades of normal schools—one for the preparation of elementary teachers, and another for school officers and instructors in the higher departments. These two classes of normal schools should be organized and conducted as *separate establishments.*"

The above emphatic endorsement of the plan I had previously presented to the Association at Marshalltown, is truly gratifying.

It will be remembered that the normal department of the University was opened in September, 1855. During the first ten or twelve years of its history, it was practically an elementary normal school, having much of that time a model school and other appliances of a normal school. It was eminently proper at that time that this department should be of an elementary grade, for the University itself was largely engaged in preparatory work.

In 1867, the trustees wisely begun to elevate the standard of scholarship requisite for admission. Gradually this work has gone forward until the present time. For obvious reasons, the normal department has also raised its standard for admission, and added one year, and then another of higher branches to its course of study; thus keeping pace with the academical department in its growth and development. The result is, that for elementary teachers, the normal course is now arranged, has too many of the higher branches and too little opportunity for elementary drill; and at the same time it is not sufficiently extended for higher normal culture.

In my opinion, therefore, the time has come for us to take another step forward toward the consummation of the system before mentioned, by transferring all elementary normal training to such normal schools as may be established throughout the State, reserving only to the University the *higher* normal work above referred to.

My reasons for the above are briefly these :

First, the University can never realize its high aims by doing such elementary work. Elementary normal training, if carried forward successfully, would require the reorganization of classes for drill in the common English branches, the re-establishment of a model or training school, and the addition of all the apparatus and appliances

of such schools in other States. This for the University, would be going backward, rather than forward.

My second reason, is the imperative demand there is throughout the State for elementary normal training, together with the fact that to some extent, this department is a bar to the establishment of normal schools. Of the twelve thousand teachers in Iowa, as near as we can ascertain, sixty per cent hold third grade certificates, and ninety-four per cent are without normal training. In elementary schools we have the great majority of ignorant and unskilled teachers, and from these schools the University must for some time to come receive nearly all its students. The supreme importance, therefore, not only to the State, but also to the University, of having this elementary work rightly done, can be scarcely appreciated.

For these, and other reasons that might be given, I recommend that the friends of the University join with the educators of Iowa in urging the Legislature at its coming session to establish normal schools throughout the State, securing an organic connection between said normal schools and this department; and that the normal instruction hereafter given in the University be such, and such only, as is appropriate to an institution of the highest grade.

THE LIBRARY.

BY AMOS N. CURRIER, LIBRARIAN.

Rev. Geo. Thacher, President of the Iowa State University:

DEAR SIR:—The University Library contains four thousand and fifteen (4015) volumes, exclusive of Public Documents, about five hundred in number.

These books have been carefully chosen with reference to their permanent value as well as their adaptation to the present wants of our students. History has been made a specialty, and in particular that of Greece, Rome, and the English-speaking countries. In general literature the collection is choice rather than extensive, embracing

the best productions of the standard authors, and some rare works of special interest, such as the publications of the Chaucer Society.

Biography, Philosophy, Science, and Periodical Literature (American and foreign), have their share of attention.

Our set of the Ancient Classics is mostly complete, while French and German literature have not been neglected. Liberal expenditure has been made for valuable works of reference, such as Encyclopedias, Dictionaries of Language, Authors Geography, Antiquities, etc., etc.

A full catalogue is yet in manuscript for want of funds to print.

An index is in course of preparotion, which, when completed, will give a full list of the subjects treated of in the whole collection, and references to all the volumes bearing upon each topic. This Concordance of Subjects already contains between eight and nine thousand references.

The Library occupies a room forty-two by twenty-seven feet; plainly, but comfortably furnished. It is open as a reading-room, and for the issue of books, seven hours each day, and its privileges are free to all students of the University.

But our present Library is only the nucleus of one adequate to our present needs, and essential to the best advancement ot the University.

Its best supplied departments fall far short of a reasonable completeness, while many others, scarcely less important, are very meagerly supplied. Collections of books, old, rare, or curious, are certainly far from valueless, but are luxuries rather than necessaries. With us, the accumulation of actual working capital must be the sole aim for years to come. Fortunately, material of this sort is attainable in the richest and most varied abundance—the priceless heritage from the ages past and the vast accumulations of our own times.

History well defined as "philosophy teaching by example," claims the first notice from its intrinsic value and its attractiveness for all classes of thoughtful readers. While no part of this wide field should be unrepresented in our selection, the history of our own country and continent should be specially complete.

While no general treatise should be omitted, of even greater value

must be regarded those descriptive of specific periods, events, movements in the normal, social, intellectual and political world, achievements in art, science and literature, material advancement, the lives of representative men, and whatever else will contribute to an accurate, clear and complete picture of the life and character of the people, and the progress of their institutions. Special attention should be paid to the collection of whatever will throw light upon the prehistoric period or the language and history of our rapidly disappearing Indian tribes.

Of no less importance is the history of England "because it is the history of our own nation and lineage and because it records the development of liberty and the institutions, of the literature and the commerce which have already exercised the most widely-spread influence upon the human family and which are destined to exercise a still more extensive influence over future generations.

Closely connected with this is, of course the history of the nations of Modern Europe—a field of great extent which cannot be too fully explored or too carefully studied. In Ancient history that of Greece and Rome is of the highest value on account of its intimate connection with the foundation and development of the religion, literature, and entire civilization of modern times.

Whatever, therefore, can acquaint us with its facts or deduce and enforce its lessons must be regarded of essential consequence.

Nor must we forget Asia, the cradle of nations, the birth-place of religion and civilization, of special interest just now as the grand theater of Christian missions, and for its new attitude towards modern idears particularly as represented by ourselves.

To their individual histories must be added the universal, for their connected views of human progress, and besides, a third class of treatises of quite as high value which set forth the growth, development, and consequences of influential ideas, principles and systems, such as histories of civilization, relifiion, education, philosophy, art, science, literature, government, etc.

On each of these topics, too, there should be sought books written from different and even opposite stand-points, that the investigator may be able to save himself from one-sided, and hence incorrect views and conclusions.

Biography, as the interpreter and representative of all the ages and the varied phrases of humanity, as well as the record and exponent of individual life and character," thus setting forth not the ideal but the actual and possible, bears an intimate relation to history and shows its claims to attention.

As the University is largely a school of *science*, in the true and catholic sense of that word, the scientific deportment of its library should be specially extensive and complete, drawing its stores from the whole range of sciences, material, mental and moral, and giving a full account of their history, progress and vast acquisitions, as well as unfolding and illustrating their widest applications to human uses and welfare.

Special mention must be made of political science in its most comprehensive sense—a knowledge of which in a country like our own must always be of the first importance.

The applications of the sciences in the professional departments of the University will of course demand a large supply of books relating to their respective fields.

Adjacent to all these classes and partially comprehending them, lies the vast field of general literature, rich in the noblest fruits of the genius, knowledge, and culture of the ages. In poetry and fiction, in the history and criticism of literature and art, in the contributions of the essayist, the orator, and the divine, whatever has high merit in style, thought, or sentiment, should with all possible speed, and in the largest variety find a place in our library.

Another want deserves mention here—that of a Professor of Books, the peer of any instructor in the University in ability and acquirements, who shall have a thorough and minute acquaintance with the entire library, be able to advise the students as to the use of its stores, and who, besides, shall fully comprehend its deficiencies and wisely supply them.

Such a library is essential to the efficiency and welfare of the University, *as a store-house of knowledge*, furnishing the fullest record of the acquisitions and achievements, past and present, in every department of human activity, and information on every subject of inquiry—appliances necessary to the broadest and most

accurate scholarship or to the most perfect success of the investigator, but otherwise beyond the reach of professors and students alike.

It is of no less value *as a means of the highest and truest culture*, importing information, inciting to activity, refining the feelings and moulding the character, by inviting to the society of the learned, the refined. and the pure. Who can estimate the personal influence of such men as Socrates, and Arnold, of Rugby?

But in a well furnished library are gathered the wisest and best men of all time, with whom we may enjoy a more intimate communion than was possible when they dwelt in the flesh. "They were often hid and inaccessible, solitary, impatient of interruption, fenced in by etiquette, but the thought which they did not uncover to their bosom friend, they now reveal to us the strangers of another age. Themselves aroused to the highest energy of thouht and feeling, these master minds stir us to intellectual effort, and inspire our moral faculties with a sympathetic activity.

In the society and under the instruction of such minds, with capacity and inclination on the part of the student, may be acquired, as nowhere else, extensive knowledge, catholic views, a varied and and thorongh discipline, and all that goes to make up the most comprehensive and symmetrical culture. But aside from its value to the University, a *thoroughly furnished library is of high consequence to the State.*

Placing within the reach of all a vast treasure house of knowledge, it would stimulate investigation, and attract to its halls inquiries in every department of labor and study, thus making its influence for good felt in every corner of the State.

For advantages such as those indicated above, no Iowan should be compelled to depend upon the munificence of other States, or turn his Steps to more favorable universities.

Having now given a full report of the affairs of the University for the interval that has elapsed since my predecessor's report to the

last General Assembly, it only remains to add a few remarks concerning its further development.

My idea of what it ought to become is, I believe, already familiar to you, and has, if I am not mistaken, your unqualified approval. To realize that idea in any large measure, must necessarily be the work of years. *But there should be a continual advance towards it.*

An institution like ours, in such a State as Iowa, at such a time as this, ought not to be allowed to remain stationery at any given point in its history *for a single year.* Its only proper watchword is PROGRESS, and the progress should be steady and manifest in every element of healthy growth and of permanent well-being. But in order to do this two pre-requisites are indispensable:

First. A vast improvement in the public schools of the State.— The University is almost wholly dependent on the schools for its yearly accessions of students. The preparation with which the applicants offer themselves for admission to the University is chiefly that only which they have been able to make at those schools. But so far are the schools in which Latin is taught at all that large number present themselves who have not even the least knowledge of the grammar of that language. The consequence is that the Faculty are under the necessity of providing further elementary study of Latin *in the University*, thus imposing on the instructors in that branch of a liberal education a grade of labor which properly belongs only to the teachers of preparatory schools.

And it often occurs that those who propose to be examined for admission are entirely ignorant of algebra, because they have had no opportunity for studying it, so that an examination would be useless, and is of course refused until the deficiency is supplied by further study. Nor is this the worst: for of those who are qualified for admission, so far as the two studies now named are concerned, some are so little acquainted with English Grammar, Geography, and United States History, that kindness to them and respect for the institution alike necessitate their rejection; while a considerable proportion of those who are admitted have been so superficially taught in these common branches as to be seriously embarrassed in their higher studies in the University.

These remarks have reference chiefly to our Academical Department. The evil, however, is not limited to that, but extends to the Law and Medical Schools where no preliminary examination is required, but where preparatory knowledge and discipline are even more important, for the sufficient reason that in these departments comparatively little opportunity is afforded for general culture, and for compensating the losses incident to early education.

To remove this very serious hindrance to the highest efficiency and value of the University it is entirely necessary that our primary schools in every part of the State be brought up to a far higher degree of excellence than they have yet attained. The pupils in all these schools should be so thoroughly drilled in the elementary branches usually taught there, as to be well qualified for more advanced studies. In order to do this, it is of the most imperative necessity that the Legislature should, in some way, provide *immediately.* at least one normal school, and others as rapidly as they can be established and sustained, for the education of teachers. It is vain to hope for any important improvement of the schools without first affording the teachers facilities for preparing themselves for work. Such preparation can be easily and advantageously made only in institutions organized for that special purpose. It is therefore in the highest degree for the interest of the University that the projected normal school in Iowa Falls, or Springvale, be approved by the General Assembly with an adequate appropriation for defraying its yearly expenses. Money so expended would be—indirectly and remotely, but not on that account the less truly,—an outlay for the benefit of the University, *and of all the denominational colleges in the State.*

In addition to the improvement of our primary schools, there is, as intimated on a previous page of this report, an urgent demand for High Schools or Academies. In every county there should be at least one such institution in order that the boys and girls who may have acquired a good elementary education, may have the opportunity of pursuing more advanced studies, such as Latin, Greek, Natural and Physical Science, and the Mathematics, and thus fit themselves for the usual four years' course in our highest institutions.

To the effecting of these improvements in the means of popular education, all friends of the University, and all believers in the mportance of sound learning and thorough mental cultivation, would give their united, untiring efforts, and the whole weight of their nfluence. Next to true morality and religion, there is nothing more conducive to all the great interests of a State *than the knowledge and the power to use it*, which may be acquired by our young men and young women diligently availing themselves of the advantages of a system of public instruction thus enlarged and made complete.

The Second pre-requisite to the best development of the University is a *sufficiency of money.*

To argue this would be superfluous. Facilities for education can no more be had without pecuniary cost than without time and thought. It is proposed in this closing paragraph to do more than name the objects which demand speedy expenditures, and make a large appropriation by the legislature a matter of stern necessity.

1. *The Medical Department.* The professors in this department have hitherto served the University gratituously, and those who are non-residents have even defrayed their own traveling and hotel expenses, besides being subjected to a considerable loss of medical practice by reason of their absence from home two days of every week during the medical term. It cannot be expected that they will do this much longer. And it this department is to be sustained, as it doubtless will be, provision should be made for paying them a fair compensation, and for furnishing them, if possible, with more ample accommodations for the prosecution of their work.

2. *The Law Department* is in need of large additions to its library immediately, and if the number of students continue to increase as it has done, it will soon become extremely difficult to do without an entire re-furnishing of the lecture-room.

3. *The Academical Department*—The wants of the several chairs in this department are set forth with sufficient clearness and urgency by the Professors themselves, in the papers to which your attention has been before directed. It is proper to add that money can hardly be used with greater advantage to the students and the University than by supplying those gentlemen with whatever helps

it may be in your power to grant them in their zealous endeavors to enlarge and otherwise improve their several departments of labor.

The University Library.—The remarks of Professor Currier, in his paper on this subject contains suggestions of too great value to be reasonably overlooked by either the Legislature or the Regents. For it is hardly possible to place too high an estimate on a large, increasing, and well assorted library viewed as auxiliary to the immediate objects of the University, and to the general interest of letters, science, and all true intellectual culture. As it now is, our library, thanks to the wise and effecient management of the Librarian, possesses rare excellence, containing, as it does, but a small proportion of light and ephemeral literature; and is of the greatest *practical* value, being resorted to every day by large numbers of students, in comparatively few instances for entertainment, but chiefly for the acquisition of substantial knowledge. When it shall have become what a University library ought to be, when our one small room shall have been exchanged for many spacious halls, and our four thousand volumes multiplied to one or two hundred thousand, then it will be to the people at large what it is to-day to the members of the University, opening its doors to all seekers for knowledge without limitations to classes or communities, and offering to every aspirant for learning, all the help which books can give. The accomplishment of this great desideratum must necessarily be very general, but in order to any approximation towards it, a constant expenditure will be indispensable.

5. *The Salaries of the Academical and Normal Professors and other Instructors.* There are at least two forcible reasons why many of these salaries should be increased. First, they are at present very small for the amount and kind of service rendered. It would doubtless be impossible to secure service of *equal value* from other men, (should any occasion impose the necessity of seeking it) *without an additional expense of several thousand dollars.* Secondly, the compensation allowed to some of our Professors is too limited to yield a comfortable support for themselves and their families. It is a pertinent question whether our prosperous State *can afford* to practice such economy.

6. *A Home for Female Students.* It is impossible to overestimate the importance of the speedy erection of a building for this purpose. If the co-education of the sexes is to be continued in the University, every inducement should be offered to young women to come to it from all parts of the State. At present many are deterred from coming by the difficulty of finding suitable homes. Should all come who desire to do so, the difficulty would prove to be an impossibility. It is a well known fact that the families in Iowa City who are disposed to accommodate students with room and board, very generally give the preference to young men. The result is, that the number of young woman in the University is comparatively small, and in many instances their apartments are extremely ill-adapted to their wants. The heroism which some of them exhibit in the steady pursuit of knowledge, despite undesirable localities and many other discomforts, is worthy of the highest praise.

To remedy this evil of poor accommodations, a building should be erected exclusively for young ladies, in a retired spot, at a convenient distance from the University, with rooms and bed rooms for fifty students, and apartments for superintendent and matron, besides a dining-hall and parlors,—to be under the control of the Regents, and managed with that wise economy which would secure the greatest comfort and advantages, at the lowest cost to the student, and without pecuniary loss or gain to the University.

7. The improvement of the University park and buildings, ordinary and extraordinary repairs, fuel, gas, printing, postage, stationery, and many other sources of expense which it is equally impossible either to foresee or avoid, make a large contingent fund an absolute necessity.

With this statement of our needs of a large appropriation of funds by the Fourteenth General Assembly, this report is respectfully submitted.

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